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ABSTRACT

This guide presents a staff development program on content area reading that high school reading specialists can conduct for teachers of content areas such as history, chemistry, and literature. Section one of the guide offers specific reasons why professional growth is necessary for teachers, why reading education ought to be part of that professional growth, and why teachers of grades 7 through 12 need to be concerned with reading education. Section two contains guidelines for preparing staff development experiences, including logistic, content, and procedural considerations. Section three provides outlines of eleven topics for staff development in content reading. Based on the responses of approximately 400 teachers, these topics include building a comprehensive elementary secondary reading program, making assignments, factors contributing to the complexity of text, developing content area vocabulary, extracting ideas from the printed page, using textual aids, providing study tips, and asking questions. Section four elaborates on the eleven topics, outlining the nucleus of a session and suggesting activities for six of the topics, while providing prototypic text, transparencies, and activities for the other five topics. Appendixes contain summary comments from the Conference on the Problems of Developmental Reading Instruction at Postelementary Levels, and a learning/reading skills questionnaire. (RL)

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Practical Paper No. 23

CONTENT-AREA READING STAFF DEVELOPMENT FOR SECONDARY TEACHERS: COMMENTS AND GUIDELINES FOR THE READING SPECIALIST

by

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Report from the Project on
Studies in Language: Reading and Communication

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Abstract

This practical paper is intended to fill a void that presently exists for the reading specialist. It is a resource for those who, although pressed for time, are concerned with presenting staff development sessions to motivate teachers to think about the impact of the reading process for learning in their content area as well as to initiate communication with content-area teachers that will continue long after the completion of the staff development sessions. The paper is divided into four sections:

1. Reading education as part of staff development: A rationale. While some educators express an interest in staff development, they are unable to list specific reasons why funds ought to be allocated for it. This section presents those specific reasons with particular attention to why professional growth is necessary for teachers, why reading education ought to be part of that professional growth, and why teachers of grades 7 through 12 need to be concerned with reading education.

2. Guidelines for preparing staff development experiences. Three types of considerations--logistic, content, and procedural--must be taken into account by the individual responsible for designing and implementing reading staff development. This section offers suggestions for ways to provide for these considerations.

3. Suggested topics for staff development in content-area reading. Each topic suggested is based on the results of a survey of approximately 400 teachers who identified the reading/learning skills essential for

effective study in their content-area. Eleven topics are discussed in this section.

4. Prototypic staff development sessions. Each of the 11 identified topics is elaborated on in this section. Of the 11 topics, 5 are complete with prototypic text, transparencies, and activities for the teacher-participants to complete. The remaining 6 include the nucleus of the session plus suggestions for activities that could be developed.

> In-service education has indeed been virtually a lost cause . . . teacher professional growth has not been taken seriously, it lacks a systematic methodology, and it has been managed with astonishing clumsiness . . . teachers have grown accustomed to its impotence, and . . . administrators have come to regard it as a routine exercise in futility. (Rubin, 1971, p. 245)

Beginning a treatise on staff development with Rubin's comment may strike the reader as a cynical introduction. The comment, however, does summarize the reality of thought about most inservice education and it is intended to challenge the reader to change that thought. Rubin was addressing inservice education, but the intention here is to present a plan for staff development. While some may contend that the terms are interchangeable, there is, as has been pointed out by Sergiovanni and Starratt (1979), a substantial difference. Inservice education, which assumes teacher deficiencies exist and that such deficiencies can be dealt with during a 1-day inspirational program, connotes a decidedly negative tone. Staff development promotes a more positive impression by suggesting that teachers have an interest in and a desire to improve their teaching abilities, i.e., to develop their expertise as a staff. Staff development assumes that teachers are willing to commit themselves to a program of development that will span several weeks, when they see how that experience will benefit them. To point out why staff development should not be considered the "lost cause" that Rubin considers inservice education to be, the sections that follow offer: (a) a discussion of why teacher professional growth, particularly in the area of reading education ought to be seriously considered, (b) some

suggestions about how to organize staff development sessions so that they can be free from what Rubin termed "astonishing clumsiness," (c) an outline of suggested topics for staff development in content-area reading, and (d) prototypic sessions which, when combined, can offer a comprehensive staff development experience in content-area reading. Reading specialists, who already possess good sense about reading as a process, can combine knowledge of the needs of their own communities with ideas from this source to provide enriching staff development experiences for teachers of all content areas in grades 7 through 12.

Reading Education as Part of Staff Development: A Rationale

A rationale for including reading education as part of staff development experiences must respond to three separate questions: (a) Why is professional growth for teachers necessary? (b) Why should that professional growth be concerned, at least in part, with reading education? and (c) Why should reading education be a concern of teachers of grades 7 through 12? Let's consider the questions one at a time.

Why is professional growth for teachers necessary?

The need for teacher professional growth can be looked at from three perspectives, that of: (a) the school district administrator, (b) the individual teacher, and (c) the teacher educator.

From the perspective of the school district administrator, staff development is no longer the luxury it may have been considered in the past (Arends, Hersh, & Turner, 1978). Declining student enrollments have brought about a change in the mobility of teachers. Because fewer teaching positions are available, teachers have less opportunity to move to other school districts. As a result, the infusion of different ideas introduced by teachers new to a system has been halted. New ideas and stimulation, therefore, must come from another source: staff development experiences. In addition, because fewer jobs are available, school districts are prevented from importing personnel to implement the educational reforms that continually interest most school districts. If an educational reform is to be realized, existing personnel must perform all tasks necessary for its implementation. This also necessitates

professional growth opportunities for existing personnel, or, once again, staff development experiences.

From the perspective of the individual teacher, staff development experiences are desirable as well. Upon college graduation, an individual is declared a "teacher." Anyone who has experienced that first year of teaching appreciates the frustration felt by what was once considered the "final product." There are probably more questions about how to teach in the mind of a novice teacher at the end of the first year in a classroom than occurred during all the years of training to complete that first degree. Attending college classes during summer vacation can help to improve a teacher's overall abilities in the classroom, but only by attending a workshop with fellow staff members can that teacher contribute to the overall improvement of the learning environment of the school. Staff development experiences can offer opportunities for teachers to share their professional expertise and also to develop new skills to improve the educational experiences of their students.

From the perspective of the teacher educator, staff development experiences are seen as part of the progressive development of the individual as an educator. Fuller (1969) reviewed literature that summarized studies of the concerns of student teachers in many content areas and discovered that concern across those content areas was consistent. Beginning student teachers reported concern about (a) how they would control their classes, (b) whether their level of knowledge of the content was adequate, (c) the situations in which they would teach, and (d) three types of evaluation--of themselves by their supervisors, of

themselves by their pupils, and of their pupils by themselves. Absent from the concerns Fuller noted were the topics usually included in education courses (e.g., instructional design, methods of presenting subject matter, assessment of pupil learning, dynamics of child behavior).

After conducting some preliminary investigations, Fuller proposed that a three-phase development of teacher concerns exists: (a) preteaching, characterized by nonconcern with the specifics of teaching, (b) early teaching when the individual is more concerned with self (e.g., class control, content adequacy), and (c) late teaching exemplified by a concern with pupils and how well they are learning. Cognitive psychologists tell us that people learn best what they are motivated to learn. What motivates individuals can be interpreted from what they identify as their concerns. Although some of what teachers should know to teach effectively is taught in the preservice courses, it could be that individuals at that level have other concerns and are, therefore, not receptive to what is being taught. If Fuller's hypothesis is correct, it could well be that preservice education of teachers can never be improved to the point that staff development can be abandoned simply because the individual needs to mature in the position before being motivated to learn what he or she needs to know.

Fuller and Parsons (1972) and Parsons and Fuller (1974) reported on research attempts to validate the hypothesis. Stated briefly, using one measure, the Teacher Concerns Checklist (TCCL), their results indicate that teachers active in the classroom exemplify concerns in three areas: self-concern, situational-concern, and student-needs (impact)

concern. The researchers concluded that while the concerns of teachers need to be described with items from all three areas, it appears that preservice teachers are more concerned about self and that inservice teachers have more situational concerns. Using a second measure, the Teacher Concerns Statement (TCS), they found that more preservice teachers expressed self-concerns and more inservice teachers expressed pupil-needs concerns. The implications of this research are clear: Individuals when they begin teaching have a set of concerns that must be resolved before they can learn to concentrate on the educational development of their students. Staff development programs are necessary, therefore, to develop professional expertise when teachers are psychologically ready.

Why should reading education be a part of professional growth experiences?

An answer to this question requires an investigation of several points: the changing needs of students, the reported needs of professionals in education, the past experiences of these individuals, and the continuing opportunities offered them with regard to reading education.

In the classroom the student must learn to effectively use all of his or her faculties. Learning to effectively utilize sight means learning to model behavior, recognize patterns, and, of course, read. Using reading as a tool for learning requires that the student develop the ability to read many types of materials with understanding. To develop this ability, the student must have plenty of opportunity to read with general guidance and, when necessary, with specific direction, to the

task at hand. In the elementary school such guidance and direction is offered by the teacher, especially with regard to the materials used during reading instruction. When the student reaches the upper elementary grades and high school the demands for reading increase. Students are expected to read more pages, and to extract more information from them at the same time as the difficulty level of the materials progressively increases. This happens at a time when the teacher offers less guidance and direction because the nature of the instruction comes to be less process oriented and more content oriented. Many teachers do not recognize that developing the reading process can mean helping students learn more content.

More experienced educators recognize that teachers need professional preparation in using reading to teach content more effectively. This was shown in a study conducted by Freed (1972). When respondents, who represented several positions in school systems, were asked in Freed's study to suggest features that should be incorporated in a secondary reading program, the three most frequently identified items were: teacher training, reading in the content areas, and study skills.

While it was pointed out earlier that preservice teachers may not be psychologically receptive to what is being taught, it is equally important to point out that for preservice teachers enrolled in secondary level preparation courses, information about the reading process simply may not be taught. Morrison and Austin (1977) conducted a follow-up study to determine if colleges and universities had made the modifications recommended by Austin and others (1961) for improving preservice

teacher education. They determined that only about 25% of the schools in the original study had followed to the letter the recommendation to require a course in basic reading instruction for all prospective secondary school teachers. Morrison and Austin's sample (161 responses from 40 states) was considered representative of teacher education institutions. We can conclude, therefore, that instruction in methods of emphasizing the reading process as a vehicle for learning content is not usually part of the preservice teacher's experience.

In addition, Bader (1975) and an earlier report by Estes and Piercey (1973) indicate that few states require an individual to have completed a course in reading instruction in order to be certified to teach at the secondary school level. We can infer from this that few certifying agencies expect that a teacher will know how to direct students to use what they know about reading to learn content. Also, we can assume that little pressure is exerted by state agencies to encourage institutions of higher education to modify their teacher preparation curriculums to include a course that will teach this. It is apparent that most teachers at the secondary level enter the classroom without having completed a vital part of their professional preparation. To complete this preparation staff development experiences centering on reading education are essential.

Articles dealing with some aspects of reading instruction appear at times in the professional journals (e.g., English Journal, Social Education, Journal of Research in Science Teaching) for specific content

areas. That such articles are published indicates that an awareness of the importance of understanding the reading process exists among either the publishers or editors of those journals or the teachers for whom the journals are designed. Witte, Morrison, and Otto (1979) reviewed content-area professional journals over approximately a 10-year period and found that the number of articles published about reading varied with the subject area. While the journals in English maintained a consistently high level of interest in the reading process and published a number of articles each year, those in social studies published a steadily increasing number of articles over the time span and, in fact, in 1978 devoted an entire issue to reading in the social studies. The topics discussed in the articles for the two content areas were varied but did address concerns pertinent to each content area. Fewer articles about the reading process were published in journals for science and math. The articles in science journals dealt primarily with ideas for rewriting information at a less demanding reading level while the articles in math journals addressed the difficulties of reading the unique symbol system of mathematics. Relatively few articles about reading appeared in the journals for industrial arts, home economics, and business education. The important point to be made here is that the value of using the reading process to facilitate content-area learning has been recognized and addressed in professional content-area publications. Equally important to realize, however, is that while such publications can create an awareness about a topic and can offer suggestions for possible ways to address a problem, they cannot

offer continual attention to that topic or personalized feedback about attempts to address that problem. Such articles can, in fact, be so general that they do not offer enough specific information that would enable a content-area teacher to attempt action in the classroom. Practical experience in utilizing reading to make student learning easier can be offered with staff development.

Why should teachers of grades 7 through 12 be concerned with reading education?

In response to this question we must consider the impact of the historical view of reading education, the diverse abilities of students, and the changing nature of the student body.

At some point in the past there existed the naive view that reading was simply decoding the printed word. This view evidently dictated that the teaching of reading could be confined to the early elementary grades. Because reading is so much more than simple decoding, reading educators have spent years trying to dispell this idea. Using reading as a tool for learning requires that students over time must become accustomed to deciphering increasingly more difficult vocabulary, following progressively more complex sentence structure, and comprehending more abstract ideas. Not all of this can be accomplished during the elementary school years. Becoming adept at using reading to learn must continue throughout the students' school career.

Students of all ability levels make up each of the classes for which a teacher is responsible. Teachers of grades 7 through 12 in

content areas are interested in having their students learn as much information as possible about their subject. To achieve this the teachers must employ, in a creative manner so as to meet the needs of each student, all the best teaching techniques. This means the teachers must be prepared to guide the more able students to become efficient and independent learners, and also assist the less able students to learn at least a minimal amount of information. This difficult task can be made easier if the teachers are aware of teaching methods that will encourage the students' development of the reading process. Staff development experiences can be used to help teachers become aware of such teaching methods.

The changing nature of the student body necessitates that such staff development experiences be scheduled as soon as possible to benefit all teachers, but especially those at the senior high level. The student body in the last few years has changed in at least two ways: (a) the student drop-out rate has declined rapidly and (b) more students of lesser ability are completing high school with intentions of going on to college (Ferguson, 1976; Harnischfeger, & Wiley, 1976; Shane, 1977). Very simply, the implication of this for the secondary level content-area teacher is that many students need more help. In the past, in classes intended for college-bound students, teachers may not have thought it necessary to offer guidance for reading. This is no longer true. Also in the past the less able students dropped out somewhere around the 10th-grade level. This meant that senior high

teachers, in classes intended for students about to enter the job market, did not have to be as concerned about providing direct guidance for the application of reading skills. But the changing nature of the student body necessitates an adaptation of the teaching methods of content area teachers. Any adaptation or change is likely to be accomplished only through the use of well-designed, effective staff development experiences.

Summary

A crucial need exists for reading education as part of the staff development experiences for all content-area teachers of grades 7 through 12. This need stems from factors unique to preteacher education as well as from factors that reflect society as it has evolved to date. Recent research suggests that preservice teacher education may be addressing concerns at a point in time when prospective teachers are not psychologically receptive. This situation must be investigated before it can be considered completely accurate, but for now one obvious omission is that, in most cases, teacher education institutions have neglected to include specific instruction about the reading process for teachers of grades 7 through 12.

The impact of our changing society can be seen in several ways. Declining student enrollment has resulted in fewer available teaching positions for those seeking job change as a means to stimulate the continuing teacher. In addition, fewer students are dropping out of school at an early age and more are planning to attend college; in other words,

the nature of the student body is changing. Meanwhile, professional content area journals are beginning to reflect a concern of teachers that learning to use the reading process to the fullest is one way to help them do a better job as teachers. Occasional articles in journals, however, can accomplish only part of the job. For content area teachers to become adept at utilizing the reading process to more effectively teach subject matter will require the implementation of well-constructed, efficiently, and thoughtfully conducted staff development experiences.

Guidelines for Preparing Staff Development Experiences[1]

Before a single session is held the reading specialist who prepares the staff development experience must make advance plans that will accommodate several different factors. These factors can be grouped into three categories: logistic considerations, content considerations, and procedural considerations. Some of the factors in each category will be discussed in the following sections.

Logistic Considerations

Logistic considerations cannot possibly be ignored. To give them only cursory attention would be a mistake. Any factor given only minimal attention could surface later and ruin the thorough planning that is given to the content of the sessions. A note of caution: Careful thought must be given to each of several factors. Each factor, along with some points you should consider are addressed below.

Who should be included in the sessions? Content-area reading should be a concern of all teachers of grades 1 through 12. It would save time to include all teachers at any one staff development session, but is that workable in your situation? Do space limitations prevent this? Is there a good working relationship between elementary and secondary

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[1]For additional comment see Appendix A, Summary Comments for Conference on the Problems of Developmental Reading Instruction at Post-elementary Levels. Many of the ideas presented in this section were confirmed during discussion at that conference.

teachers in your school system? Should only teachers of grades 7 through 12, who have a well-defined content-area specialty, be included at one time and elementary teachers at another? Should all content-area teachers be required to attend? If you plan to exclude some teachers, be prepared to explain why. Keep in mind that it is extremely difficult and not very efficient for one person to direct a productive working session for more than 20 to 25 people.

When should the sessions be held? Most workshop sessions for teachers are scheduled for 2 hours after school when teachers have already worked a full day. At these hours teachers are involved not only with the successes and failures of that day, but they are also anticipating what they must do to prepare for the next. It is difficult then for even the most enthusiastic individuals to be receptive to new ideas or acceptant of different ways of approaching familiar tasks. Investigate alternative times during which you can conduct the sessions. If your district is committed to improving content-area reading instruction, will the administration provide funds for substitute teachers so that participating teachers can be free to work at learning during regular work hours? If teachers can't be freed from teaching their regular classes, can substitutes be hired to take over for teachers during the hours they are assigned to patrol hallways or study halls? Teachers freed from these onerous tasks might be exceptionally willing workshop participants! Is it possible to schedule workshop sessions during evening hours so that teachers have some break time after school? What about Saturday mornings?

If no alternative to the after-school hours can be found, try to help the teachers ease into a working session. Fifteen minutes allotted for coffee or soda and a light snack (perhaps the participants might take turns providing the "treat") could help to put the teachers at ease and prepare them so they are more receptive to the content you plan to present.

Where should the sessions be held? The ideal workshop setting would be away from the school. This would prevent teachers being spirited away to answer telephone calls or to respond to students who "can't wait" until the next day. The ideal facility, however, isn't always feasible because of transporation costs or excessive travel time or even availability. A compromise location would be a quiet working area (preferably without a telephone) that is as removed as possible from student traffic. The room should be well-lighted, of course, and should have furniture that is easily moved to allow for flexibility in grouping.

Should the teachers be paid for participating? This question can be answered only by the administrators who handle the financial affairs of your school district. If funds are available, monetary reward might encourage some teachers to be more willing to participate. Funds are scarce, however, so be prepared to be told there is no money for such activities. Reward could be given by allowing teachers who participate in all of the sessions to receive self-improvement credit that would satisfy the requirements of the school district.

Who should conduct the sessions? As a reading specialist, you are the most likely individual to conduct these staff development sessions.

If you don't feel completely at ease, follow the guidelines offered here and consult with individuals at a nearby college or university or with other reading specialists in neighboring school districts. Perhaps you could team with one of these reading specialists and together offer a staff development program for the teachers in both districts. Don't call in an "expert" to conduct the sessions for you. Teachers do not always respond well to outsiders who are present for only the hours of the workshop session. The ideas of outsiders may be considered suspicious and the ideas probably won't be implemented because the "expert" won't be there to follow them up. Most educational change takes place when there is a trusted leader who is familiar and will be around later to offer reinforcement or encouragement as individuals attempt to make changes.

Content Considerations

Focusing on a topic for one session requires choosing among several possible topics while keeping in mind four basic guidelines concerning what to present, how much to present, and how to present it. Some points concerning each guideline follow:

Individuals learn best what they feel a need to learn. The teachers who participate in your staff development sessions should be polled about their preferences well in advance of the date the sessions are to begin. If you plan to select some of the topics suggested in the next section, one way to do this would be to ask the teachers to rank order the topics by title. Then you can choose the topics to be presented in accordance

with the teachers' preferences. Another way to determine the teachers' needs would be to ask them to complete the skills questionnaire that is included in this paper as Appendix B. All of the skills included on this questionnaire that were identified as essential for learning in content-area classes (see Morrison, 1980) were included as part of the content for one of the suggested sessions described briefly in the next section. You can then use the responses of the teachers in your school to guide your selection of the topics to be presented.

The important key is first to ask the teachers to indicate in some way what they believe is important for them to learn. Next, the teachers' ideas must be incorporated into the sessions that you include in the staff development experience. Teachers who have some say in the selection of topics will be much more receptive to the ideas that are presented.

Content for any one session must be manageable. Many of the ideas about reading education are new to content-area teachers. New ideas offered in reasonable and related chunks are more likely to be accepted than are ideas offered in such large pieces that they overwhelm the participants. When individuals are presented with a new idea of a magnitude they can deal with, they may consider implementing that idea. When individuals are presented with a new idea of overwhelming proportions, they won't even listen attentively to the presentation of that idea. In other words, for content-area staff development, each session should present one aspect of reading education, not all aspects at once.

Participants should leave each session with evidence in hand that they have completed an activity dealing directly with content-area reading. This physical evidence, because it will have required the participant to become actively involved with the topic of the session, later will serve as a reminder of the activities that were completed. Such reminders can prompt the participant to try out ideas for content-area reading that otherwise could have been forgotten. It is essential that the activity to be completed is one that deals directly with content-area reading. The activity must also have an application in that participant's content area.

Participants should leave each session with an idea that can be implemented immediately. It is essential that each session offer some "payoff" for the participant. Teachers want practical ideas that aren't difficult to implement. If one session is not productive, busy teachers may find several legitimate reasons that will justify their decision to refuse to attend other sessions.

Procedural Considerations

Procedural considerations deal with how you will share the manageable bit of content you have selected with the participants you have invited in the room you have chosen. First of all, let's take a lesson from our own past experiences. Perhaps some of the most deadly inservice sessions we can remember were lectures. As participants we sat and listened, or at least pretended to, while we thought about all we could

be doing if we didn't have to sit and listen to a boring speaker who didn't understand our problems. In devising the staff development experience for content-area reading, try to avoid sessions that are built completely around a lecture format. Of course, lectures (or presentations) cannot be completely eliminated, but they can be used sparingly and they can be broken up by activities that will keep all of the participants actively involved.

There is one idea to keep in mind when planning activities for any staff development session: Keep the participants ACTIVELY INVOLVED. Active involvement can take many forms. Harris, Bessent, and McIntyre (1969) ranked activities on a scale from those with a low experience impact to those with a high experience impact. From low experience to high experience the activities were as follows: (a) lecture, (b) illustrated lecture, (c) demonstration, (d) observation, (e) interviewing, (f) brainstorming, (g) group discussions, (h) buzz sessions, (i) role-playing, and (j) guided practice. The activities at the upper end of the scale are the type you want to include in the sessions you direct. Harris, Bessent, and McIntyre also point out that the high experience impact activities (e and above) are those that not only allow the director of the session to control the content, but also ones that encourage two-way communication. And that really is the point of staff development for content-area reading: to get teachers involved with thinking about the impact of the reading process for learning in their content area and to initiate communication with the reading coordinator

that will continue long after the completion of the staff development sessions.

General Guidelines Followed in Devising Suggested Sessions

To devise the prototypic sessions that are included in this paper, we drew up four general guidelines. These guidelines include ideas discussed above as content considerations as well as others defined above as procedural considerations. These guidelines are:

1. Introduction. There should be some input from the session leader who (a) establishes the purpose and (b) guides the direction of the lesson. The assumption is that the session leader will have some background in reading. PURPOSE: For teachers to gain an understanding of a particular aspect of the reading process.

2. Simulation. There should be a simulation activity in which all teachers will participate regardless of their content-area specialty. PURPOSE: For teachers in all content areas to share an experience in working with one aspect of the reading process.

3. Application. There should be an activity in which teachers apply what they have learned in that session to their own content-area materials. Because of time limitations, teachers may have to select one or two aspects of the topic for emphasis. PURPOSE: For teachers to see how that aspect of the reading process could be applied to their content area.

4. Sharing. There should be a sharing session where teachers tell what they have done with the topic in their content area. PURPOSE:

For teachers (a) to realize that what they do is worth sharing with others and (b) to learn that the reading process cuts across all content areas.

Throughout the development of the suggested sessions we have thought repeatedly that a very desirable follow-up activity for any one session or all the sessions would be classroom observation for the participants and the discussion leader. The purpose of this observation would be to allow teachers opportunities to exchange ideas that work. If you follow the plan of suggested activities, please encourage classroom observation for all the participants. Many teachers may be reticent at first, but if they can be coaxed into trying observation, the rewards may be worth the effort. Sharing experiences through observation could be the means by which we can get content-area teachers to view reading as a process for learning all content.

Suggested Topics for Staff Development in Content-area Reading

Selecting topics for content-area staff development experiences is a difficult task. To the reading specialist familiar with the complexity of the issues in reading, deciding on what should be included, what excluded, and how what is included should be presented requires conscious decision-making based on information drawn from as many sources as possible. To devise this suggested list of topics we relied on: (a) our experiences in the field of reading, (b) what was reported in reading research, (c) what was considered important about the reading process by those who had written content-area teaching methods textbooks, and finally, (d) secondary school content-area teachers themselves.

In the past decade there has been a strong emphasis in reading education on the development of reading skills. This emphasis has had an impact on the materials used to teach reading in most elementary school classrooms. Anyone who doubts this is invited to compare basal readers today with those of 15 years ago. Most basal readers of today place some emphasis on teaching reading skills. And, although other methods of teaching reading have been promoted, especially language experience and individualized reading through the use of trade books, the basal reader continues to be the most favored method. In fact, there are estimates that the basal reader is used in 95% to 98% of this country's classrooms (Spache & Spache, 1973). We can conclude, therefore, that the students in our secondary schools today were taught to read with some emphasis on these reading skills.

Because we were concerned with devising ways to help the secondary teachers of today deal with the secondary students of today, we began our selection process by compiling a list of 35 reading/learning skills (see Appendix B) that these secondary students probably learned in reading classes in elementary school. We submitted this list of 35 reading/learning skills to approximately 800 teachers of grades 7 through 12 whose content-area specialty was one of the following: English/language arts, social studies, science, mathematics, home economics, industrial arts, or business education. Over half of the teachers who were sent a questionnaire responded. Each teacher indicated whether each of the skills listed was relevant or not relevant for learning in his or her content area and, for each skill that was relevant, whether or not he or she expected to need to offer students help with it when it was used in the class. The teachers also added other skills they thought ought to be included and offered additional comments as well. The results of this study (Morrison, 1980) formed the basis for decisions about the topics for the prototypic staff development sessions that are included in this paper. In other words, we selected the topics based on the reading/learning skills taught in elementary school that secondary level content-area teachers believed students need to apply to the reading materials assigned in their classes.

Three additional thoughts guided our selection of session topics. These thoughts illustrate our philosophy concerning staff development for content-area teachers. While the reader will not find these ideas spelled out explicitly elsewhere in this text, being aware of our

position may help the reader understand why we have expressed ideas in the way that we have.

First of all, the primary concern of most secondary level content-area teachers is to teach their subject matter. These teachers, in accordance with the certification requirements of most states, have been well versed in that subject matter. Their preservice teacher preparation was heavily concentrated on developing subject matter expertise with considerably less emphasis on developing expertise about the intricacies of the learning process. Usually little happens in the school environment itself to convince the teacher to abandon an emphasis on imparting subject matter information to students. Because we know that content-area teachers are coming from this perspective, it would be wise for us to present our ideas from the viewpoint of strategies that will enable these teachers to increase the efficiency with which students are able to learn the information in their content area.

Second, it is important for content-area teachers to understand the philosophy behind the reading jargon, but learning just that reading jargon is not important. The focus for the themes or topics of the sessions that we devise, then, must be concerns of content-area teachers rather than concerns of reading people. It is highly probable that these concerns will be similar, if not identical. If there is a difference, however, it is preferable that the interpretation of the concern be from the perspective of the content-area teacher.

Third, the expertise of the content-area teacher is the chosen subject matter; therefore, the reading skills that this teacher should

encourage students to apply are those that will help them comprehend the reading material of that subject. The expertise of the professional in reading education focuses on understanding, and helping others to develop a facility with, the reading process. In instances where students need help in decoding words, the professional in reading should be the one to offer it, not the content-area teacher. The session topics that we develop, then, will not be concentrated on decoding skills, but instead on comprehension and study skills.

Objectives of Staff Development in Content-area Reading

For each content-area teacher these sessions are intended to:

1. Impart some measure of familiarity with the reading process.

2. Develop a sensitivity to reading skills that should be applied to improve the learning of specific content.

3. Instill an understanding that an emphasis on the reading process can enhance learning in the content areas without sacrificing content.

Outline of Topics for Staff Development in Content-area Reading

Session A: Building a Comprehensive K through 12 Reading Program

Rationale for topic selection. Teachers' comments offered voluntarily on the reading/learning skills questionnaire plus their comments in private discussions.

Purpose of sessions. Most teachers at the postelementary level are unfamiliar with the reading instruction that students experience at

the elementary level. They also are not aware of how the earlier reading experiences of the students might relate to the learning environment in their content-area class. The purpose of this session is to explain in general terms how reading is taught at the elementary level and, in more specific terms, why reading should still be a focus of attention by teachers at the secondary level.

Session B: Making Assignments

Rationale for topic selection. Teachers' reactions to comprehension and study skills on the reading/learning skills questionnaire. These skills include setting a purpose for reading, formulating questions relevant to the purpose for reading, attending to the organization of material, interpreting specialized notations, and interpreting graphic displays.

Purpose of session. Reading assignments are sometimes made daily in content-area classes. The purpose of this session is to demonstrate that attention to reading factors can produce an assignment that is brief, yet meaningful for students. In this session the appropriate factors are identified and suggestions to implement them are offered.

Session C: Factors Contributing to the Complexity of Text

Rationale for topic selection. Teachers' comments offered voluntarily on the reading/learning skills questionnaire plus their comments in private discussions.

Purpose of session. In order to wisely choose the materials that students are to read and to anticipate the types of difficulties students may encounter with a particular text, the teacher must be familiar with the factors contributing to the complexity of written materials. The purpose of this session is to develop an awareness of some of those factors (e.g., background experience, vocabulary, sentence complexity) and to offer suggestions teachers could implement to ease the impact of those factors.

Session D: Ideas Are Build With Words: Developing Content-area Vocabulary

Rationale for topic selection. Teachers' reactions to word attack and vocabulary skills on the reading/learning skills questionnaire. These skills include using context clues to determine the meaning of an unfamiliar word (or a different meaning for a familiar word or the correct pronunciation of a word), using roots, prefixes, and suffixes to determine the meaning of a word, and identifying on sight frequently used technical terms.

Purpose of session. As knowledge of content-area vocabulary increases, a student grows in the ability to understand and work with the information of that content area. The purpose of this session is to offer suggestions that, if implemented, should aid teachers as they help students develop a meaningful content-area vocabulary.

Session E: Extracting Ideas From the Printed Page[2]

Session F: Making Sense of Ideas Extracted From Print

Rationale for topic selection. Teachers' reactions to comprehension skills on the reading/learning skills questionnaire plus their comments on that questionnaire. These skills include determining main idea of a paragraph and a selection, considering author's purpose, identifying details to support a position, questioning relevance of information to a topic, scanning for details, determining sequence, identifying relationships and conclusions, utilizing transitional words, phrases, and clauses, determining fact vs. opinion, and identifying persuasive techniques.

Purpose of sessions. In order to learn from text, students must first extract the idea from the text and then must, in some way, use that idea. To extract ideas from text the student must apply a number of reading/learning skills developed during the early years of schooling. The purpose of these sessions is to help the content-area teacher become aware of the types of skills that students have developed and to suggest some activities that will require each student to apply the appropriate skills to learn efficiently from content-area materials.

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[2]Sessions E and F are companion sessions and should be conducted in order (E before F) with as little time as possible lapsing between sessions.

Session G: Utilizing Textual Aids

Rationale for topic selection. Teachers' reactions to comprehension skills on the reading/learning skills questionnaire plus their comments in private discussions. These skills include interpreting specialized notations and interpreting graphic displays.

Purpose of session. Most authors of textbooks offer to the reader textual aids that are designed to facilitate comprehension. Most of these aids offer a great deal of information concentrated in a small space. Usually the assumption is made that students understand how to extract detailed information from these aids, but unfortunately most students never do learn this. The purpose of this session is to familiarize teachers with the skills necessary to extract information from textual aids and to offer suggestions the teachers might use to help their students utilize these aids more effectively.

Session H: Study Tips for Making Every Minute Count

Rationale for topic selection. Teachers' reactions to study skills on the reading/learning skills questionnaire plus their comments, specifically with regard to systematic study techniques. These skills include skimming for overview, scanning for details, and adjusting speed to difficulty of materials and to purpose for reading.

Purpose of session. Reading to learn as part of serious study of a subject requires a different approach than does reading for a bit of specific information or reading for pleasure. The purpose of this

session is to help teachers develop an understanding of approaches to reading different types of material and to guide teachers as they develop ways to get students actively aware of how to approach reading a specific piece of material.

Session I: Making Meaning Meaningful and Lasting: Additional Study Tips

Rationale for topic selection. Teachers' reactions to study skills on the reading/learning skills questionnaire plus their comments, specifically with regard to systematic study techniques. These skills include formulating questions relevant to the purpose for reading, skimming for overview, scanning for details, and taking notes in a meaningful way.

Purpose of session. Students can be successful at decoding the text and extracting its meaning, but later they cannot remember the importance of that meaning or even the meaning itself. The purpose of this session is to acquaint teachers with activities that can encourage students to become actively involved with content-area materials as they study, so the information will become meaningful and more apt to be retained.

Session J: Asking Questions

Rationale for topic selection. Teachers' reactions to comprehension and study skills on the reading/learning skills questionnaire plus their comments in private discussions. These skills include employing appropriate test taking strategies, questioning the relevance of information to a topic, and formulating questions relevant to the purpose for reading.

Purpose of session. Much student-teacher interaction centers on asking and answering questions, both in classroom discussions and in testing situations. The purpose of this session is to acquaint teachers with possible strategies they could develop that would enable students to respond with greater success in all types of question answering and asking situations.

Session K: Putting it All Together

Rationale for topic selection. Teachers' comments offered voluntarily on the reading/learning skills questionnaire plus their comments in private discussions.

Purpose of session. Each of the topics presented earlier emphasizes one aspect of the reading process. The purpose of this session will be to put these aspects into perspective. Much of this session will demand teacher participation in solving the problem all teachers face: How to get two jobs done, i.e., how to help students become more efficient, independent readers and how to direct students to learn as much subject matter information as possible.

Prototypic Staff Development Sessions

Eleven prototypic staff development sessions are included in this section. These sessions are in various stages of development; some are complete (Sessions A,B,G,H,L) while others include only the nucleus of a session (Sessions C,D,E,F,J,K). The original proposal for this series of sessions called for all sessions to be completed and field-tested by staff personnel as well as by reading specialists in the schools. Support funds, however, were reallocated so that the work effort of the project had to be redirected before the sessions could be completed. Each of the completed sessions follows a set format:

1. Introductory statement that briefly describes the session and outlines the purposes.

2. Outline for that session with major points, presentations, and activities designated. Each activity is identified as to size of group (e.g., individual, small group), type (e.g., guided practice, discussion), and focus (i.e., intent of activity).

3. List of materials needed to complete the session.

4. Text of the session that follows the outline presented earlier. This text is written as a sample commentary that could be presented by the session leader. It is not intended, however, that the session leader would actually read the text to the group. The text is offered as a model. The ideas in the text must be presented in the leader's own words in order to promote credibility with the participants.

Throughout the text are *PROCEDURAL NOTES that direct the leader to (a) suggested transparencies that could be used for the next section

of the presentation or (b) suggested activities that will serve to actively involve participants with the ideas being presented.

5. Transparencies that are suggested for use with the text. The session leader can hand letter these ideas on transparency acetates exactly as they are or can adapt the ideas for use with a specific audience. In the text a *PROCEDURAL NOTE suggests the point at which the use of the transparency is most appropriate.

6. Activities (with directions) and handouts. These activities have been designed to encourage active involvement of the participants. The point at which their use would be most appropriate is indicated in the text by a *PROCEDURAL NOTE. Any materials needed to complete the activities are listed before the text in the section "Materials Needed for Session X." Each activity and each handout is labeled by session letter (A through L) and by number (1 through X) within that session (e.g., Activity A.3, Handout B.5).

A Word About Using These Prototypic Sessions

Before using any of these sessions, read completely through the session. Decide what portions are appropriate for use in your situation and then make adaptations as necessary. Use the "Materials Needed" section as a guide so that you will be sure to have enough copies of handouts that you plan to use. Remind teachers ahead if they will need to bring their own texts to the session to complete a specific activity.

Remember above all that these sessions have been designed to be a resource for you. Use them as a resource: Add where you know the teachers in your situation have a particular concern and delete portions

that are not appropriate for your participants. Our goal in devising these sessions has been to share with teachers that an emphasis on the reading process can help their students to become more efficient and effective learners. If that is your goal as well, we hope our efforts will help you to be successful.

Session A: Building A Comprehensive K-12 Reading Program

Teachers at post-elementary school levels ought to see why and how reading instruction at the elementary school level provides a basis for subsequent development and application of basic reading skills. With an appreciation for the foundation laid at the elementary level, they will be in a better position to build on that foundation. The purposes of this session will be:

1. To review the main features of elementary school reading programs.

2. To establish the need for the systematic application of reading skills throughout the K-12 school experience.

*PROCEDURAL NOTE: TRAN. A.1 summarizes the purposes.

Outline for Session A

I. Reading Education: Historical Highlights

*Presentation

*Activity A.1 - Individual, Observation/Participation: Basal Readers

II. Aspects of the Reading Curriculum: Elementary Level

*Presentation

. Word identification skills

*Activity A.2 - Individual, Observation/Participation: Sight Words

*Activity A.3 - Individual, Observation/Participation: Phonics

. Comprehension skills

. Study skills

III. Aspects of the Reading Curriculum: Postelementary Level

*Presentation

*Activity A.4 - Small group, Application: K-12 Text Change

IV. Conclusion

*Presentation

Materials Needed for Session A

- 1 copy each of Transparencies 1 through 14
- Overhead projector and screen
- 1 copy for each participant of Handouts A.2a, A.2b, A.3a, A.4a
- Basal readers and workbooks for several grade levels, to be used for Activity A.1
- Content-area text books for grades 1 through 12 for all content-areas represented by participants, to be used for Activity A.4

Session A: Building A Comprehensive K-12 Reading Program

I. Reading Education: Historical Highlights

*PROCEDURAL NOTE: See TRAN. A.2

In line with the truism that Americans "...value the individual person more than all else..." the overriding quest in the pedagogy of reading is to discover ways to enhance the learning of individual students. Stated another way, the basic question has been and continues to be:

> Given that there are more students who need to learn to read than there are teachers to teach them, what is the best way to organize students, teachers, and the curriculum--to manage instruction--for the effective teaching of reading?

Attempts to answer this question have been much more common at the elementary than at the post-elementary level. A brief look at the historical highlights that have shaped both the question and tentative answers can provide an overview of reading instruction in the elementary schools.

- Managing instruction became an issue of concern in the mid-1800s when educators began to seek more efficient ways to deal with larger and more diverse student populations. The tutor hired to teach only the children in one family became less and less a realistic alternative.

- Graded plan of school organization--developed in Prussia and advocated by Horace Mann--was adopted in urban schools around mid-1800s. The one-room country school, still very much in existence through the early part of this century, eventually adopted a modified form of the graded plan. Today the graded plan remains the most pervasive organizational plan.

*PROCEDURAL NOTE: See TRAN. A.3

- Soon after graded schools came graded readers (or BASAL readers), with a book for each grade. Over the years the basal readers have been almost universally adopted and they have been made more and more comprehensive. The basal readers are the most potent and pervasive force in teaching reading in the nation's schools today.

*PROCEDURAL NOTE: Conduct Activity A.1

*PROCEDURAL NOTE: See TRAN. A.4

. Almost from the very beginning, some educators have been attempting to break the lock-step of a heavy handed graded approach. By the end of the 1800s concerned educators were trying to

- differentiate curriculums for different learners.
- adapt instruction to individuals' progress rates.
- train specialized personnel to facilitate or to augment the work of classroom teachers.

(NOTE: Elaborate on each of the above attempts in terms of locally appropriate examples.)

*PROCEDURAL NOTE: See TRAN. A.5

. BEFORE WWI, reading instruction was the exclusive business of the elementary school. SINCE THEN there has been increasing recognition of a need for formal reading instruction at the upper levels of formal schooling. This recognition came in response to changes in the school population.

Before WWI very few students, in fact only the very best, continued their education beyond the elementary school. WWI prompted many changes on the international and the national scene. The most notable change observed in the schools centered on the students themselves. More students of all ability levels discovered jobs were increasingly difficult to come by and so stayed in school longer.

Over the years legislation has been passed mandating that students, regardless of interest or ability, remain in school until at least age 16. In more recent years other societal changes, such as the movement for minimal competency assessment legislation have pointed out the need to provide formal reading instruction at upper levels. In fact it has become apparent that there is a need for formal reading instruction for other groups--e.g., illiterate adults, literate adults with special needs. NOW reading instruction may be directed to any population, preschool through adult.

*PROCEDURAL NOTE: See TRAN. A.6

. Between 1920 and 1935 the practice of forming THREE READING GROUPS was introduced and almost universally adopted. Dividing a graded class into three reading groups was considered the best way to accommodate the differing abilities

of the students. The best students, using the appropriate basal reader became the "Bluebirds", who could breeze quickly and easily through the reader. The average students i.e., the "Robins", could be expected to take longer to cover the same material while the less able students, i.e., the "Buzzards", everyone figured anyway to be a hopeless cause.

Alternatives to the three reading groups have been suggested, particularly since the mid-1950's, --e.g., individualized instruction, open schools with learning centers for reading instruction, team teaching, cross-class grouping--BUT the 3-group plan remains as the mainstay for grouping.

*PROCEDURAL NOTE: See TRAN. A.7

. Prior to the mid-1900s, the big events were grade-leveling and basal readers. The period since then can be characterized as time when alternative proposals for managing instruction abound and, paradoxically, innovation is commonplace.

The quest for a more efficient means of managing instruction has led to alternative ways of organizing:

- students (e.g., different grouping patterns, especially individualized reading)

- teachers (e.g., departmentalization, teaming)

- the curriculum (e.g., basal readers, skill management systems)

(NOTE: In addition to the examples above, elaborate on each of the points in terms of locally appropriate examples.)

*PROCEDURAL NOTE: See TRAN. A.8

BUT . . .

For the most part, things haven't really changed very much:

- almost all schools continue to be organized by grade levels

- most kids continue to be assigned to one of three reading groups

- the vast majority of teachers continue to rely on basal readers to teach reading.

It's time now to look at what is taught -- the content of the reading curriculum.

II. Aspects of the Reading Curriculum: Elementary Level

At the elementary school level, the emphasis is on learning to read, whereas at post-elementary levels the emphasis should be on reading to learn. To teach reading, one focuses on the subskills of reading--and this is what we will do to describe the content of the reading curriculum at the elementary school level.

*PROCEDURAL NOTE: See TRAN. A.9

The subskills of reading can most easily be discussed by thinking of the reading curriculum as being divided into three parts. The parts are not equal in volume, but learning each part is necessary for effective, efficient reading to take place. These 3 parts can be labeled Word Identification, Comprehension and Study.

At the early elementary level, when the students are learning to read, the greatest emphasis is going to be on the word identification subskills. The other subskills are important (as are other facets of reading) and they aren't going to be totally neglected or forgotten, but the greatest emphasis will be on developing those word identification subskills.

Let's look at each category in greater depth.

A. WORD IDENTIFICATION SKILLS

*PROCEDURAL NOTE: See TRAN. A.10

The skills included in this cluster include all the skills necessary to (a) work out the pronunciation of printed words--word attack skills--and (b) develop meaningful associations for printed words--vocabulary development. Techniques for vocabulary development vary widely, but the word attack skills can be clustered thus:

. Prereading skills

- visual skills: letter orientation, d b
  letter order
  letter detail
- sound skills: matching sounds
  blending sounds

. Sight words

- early association of meaning with printed words

- basis for analytic phonics

*PROCEDURAL NOTE: Conduct Activity A.2

. Phonics

- enable students to pronounce words they haven't seen before in print

*PROCEDURAL NOTE: Conduct Activity A.3

. Structural analysis

- a step beyond phonics: phonics skills help students pronounce unknown words, structural analysis skills help students pick out already known meaningful parts of new words. Many of you have worked with prefixes and suffixes with your students. Recognizing that a prefix or a suffix has been added to a word is an aspect of structural analysis.

. Contextual analysis

- help with pronunciation and meaning AND with attaching new meaning to "known" words

Word attack skills ought to be (a) developed early in the learning-to-read sequence, i.e., in the early years of elementary school, and (b) developed to a point of AUTOMATICITY so that they ought not to be of particular concern to content-area teachers at postelementary levels.

(NOTE: AUTOMATICITY may be an unfamiliar term for you. Simply put, automaticity means developed and practiced to the point that little or no conscious effort is needed to put the skill into action. In other words, word attack skills should be almost instinctive so that the reader reacts automatically as he/she progresses through a page of text.)

B. COMPREHENSION SKILLS

*PROCEDURAL NOTE: See TRAN. A.11

The skills in this cluster have mainly to do with extracting-meaning-from/attaching-meaning-to (a) words, (b) sentences, (c) passages. Some of the fairly typical skills are the following:

. Word meaning skills

- Affixes, homophones/homonyms, synonyms/antonyms

- Context clues (focus on meaning), explicit and implicit

. Sentence meaning skills

- ANALYSIS: attending to details

- SYNTHESIS: paraphrase

- SENTENCE STRUCTURE

. Passage meaning skills

- Main idea skills: topic with organizer, topic without organizer, main idea with or without organizer, implicit main idea

- Relationships/Conclusions skills

. Sequence skills: i.e., using cues from the text to determine the order of occurrence of events

- Before/after, calendar markers, explicit-implicit clues

The position here is that reading comprehension can be taught directly both by (a) modeling and (b) focusing on skills. Teaching specific skills is a matter of SHARPENING certain behaviors (differentiating FIGURE from GROUND).

C. STUDY SKILLS

*PROCEDURAL NOTE: See TRAN. A.12

There is a lesser degree of consensus regarding study skill than in other areas. The following are some "typical" skill groups--also included are "habits" for work and study type reading.

. Skills for locating and organizing information

- alphabetizing, guide letters/words

- books parts

- reference works

- note-taking and outlining

. Specialized study skills

- Reading maps

- Interpreting graphs and tables

. Personal reading habits

- skimming and scanning

- variable rate

- assessing sources, etc.

AUTOMATICITY is the goal in teaching word attack skills and perhaps even comprehension skills...BUT...THOUGHTFUL, habitual application is the goal in teaching study skills. (NOTE: Habits can't be taught, but they can be fostered.)

III. Aspects of the Reading Curriculum: Postelementary Level

*PROCEDURAL NOTE: See TRAN. A.13

The focus of the reading curriculum changes from the elementary level to the postelementary level. At the elementary level students are busy learning the subskills of reading as they endeavor to learn to read. By the time most students have reached the postelementary level their word attack skills have been developed to the point of automaticity. Their comprehension and study skills, however, may need to continuously develop as the text becomes more difficult. In addition, all students will need practice in applying these skills in order to extract meaning from the text. To learn through reading, one applies the subskills. Seeing to the application of subskills, then, is largely what teaching reading at post-elementary levels is all about. Postelementary teachers need to know what the skills are not only to see to their application but also to recognize the need for corrective teaching. In the next few sessions we will be looking closely at these skills and at the role they play for students as they go about learning in your content area.

*PROCEDURAL NOTE: See TRAN. A.14

For now let's look at the broader picture, at what the all-school postelementary reading program should look like. The all-school reading program should systematically address the reading needs of students at all levels. Such a comprehensive approach is necessary for several reasons:

. To provide for the application as well as the acquisition of reading skills.

To apply skills properly requires the guidance of someone who knows a particular content-area. To say this another way: A science teacher knows the important ideas to be extracted from a biology text. The science teacher, therefore, is the best person to foster the application of reading skills with that science text. The same can be said for a social studies teacher with an American history text or a business education teacher with a business law text and so on for each of the content-areas.

Likewise, to help students acquire skills--especially students who at the postelementary level have not yet acquired them--will probably require the expertise of the reading teacher.

The science teacher, the social studies teacher, the business education teacher and the reading teacher working cooperatively can see that all students are helped at the point they need it most.

. To permit coordination of the teaching of reading across all content areas.

The reading process is used for learning in all content areas. By calling upon the students to apply many of the reading skills they have developed as they study content materials, the students will be prompted into sharpening those reading skills. The student, in fact, will become not only a better reader but a better learner as well. This can only mean that the student will learn more information, more efficiently,in each of the content areas.

. To permit coordination of special services.

Students with reading problems who are instructed only in special reading classes will probably leave those classes with many of their problems unresolved

...unless there is carry-over to other classes. The reading teacher can do only so much in helping a student to work through those problems. It takes a teacher with special subject matter expertise to help a student learn that subject matter.

. To reflect and accommodate the changing demands of the developmental reading task.

This is probably the most important reason for having an all-school reading program. Students need help as they attempt to make several transitions all at once:

- from learning to read to reading to learn
- from attacking relatively simple text where the reading is often teacher-directed to attacking more complex text where the reading is usually self-directed
- from using almost exclusively narrative text to using primarily expository text

*PROCEDURAL NOTE: Conduct Activity A.4

IV. Conclusion

The development of the reading process is continuous during the lifetime of an individual. The student at each stage of schooling may need guidance in learning from the text at hand. As the student matures his/her reading skills develop. But at the same time the text the student is assigned to read becomes more complex. In addition, the subject matter becomes more abstract. When the student begins to work at the postelementary level the reading guidance needed rarely is concerned with how to attack a word. The guidance that would profit that student the most involves a focus on the application of the reading skill that will help in extracting meaning from the text. The person with the best expertise to offer this guidance is the teacher of that subject. Teachers of all subjects working together on the same theme -- application of reading skills to learn more information -- can help to encourage the development of independent, efficient learners.

Transparencies for Session A

TRAN. A. 1

Purposes of Session A:

- Review features of elementary school reading programs
- Show need for K-12 reading program

TRAN. A.2

THE BIG QUESTION . . .

given more students than teachers, what's the best way to organize students, teachers and the curriculum for the effective teaching of reading?

TRAN. 3

How to manage more students?

Graded Organization

Graded Readers, also known as BASAL READERS

TRAN. 4

Concerned educators warned:

- Differentiate curriculum
- Adapt rate of instruction
- Train specialized personnel

TRAN. 5

BEFORE Word War I

reading's for kids

SINCE World War I -

reading's for everybody

TRAN. 6

3 groups (1920-1935)

almost universal

TRAN. 7

During mid-1900's, alternatives

proposed for organizing:

- Students
- Teachers
- Curriculum

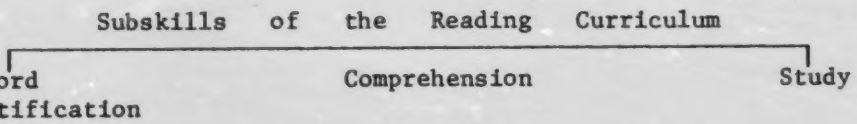
TRAN. 8

Since mid-1900's, many changes

suggested, <u>But Still</u>:

- Grades
- 3 groups
- Basal readers

TRANS. 9



TRAN. 10

Word Attack Skills

- Pre reading skills
- Sight words
- Phonics
- Structural analysis
- Contextual analysis

(Vocabulary)

TRAN. 11

Comprehension Skills

- Word Meaning
- Sentence Meaning
- Passage Meaning
- Sequence

TRAN. 12

Study Skills

- Locating
- Organizing
- Special Skills
- Personal Habits

TRAN. 13

Reading Curriculum

Subskills of Reading

LEARNED → Elementary level (Learning to Read)

APPLIED → Secondary level (Reading to Learn)

TRAN. 14

Reasons for all-school reading program:

- Skill application and acquisition
- Coordination across content
- Coordination of special services
- Changing demands

ACTIVITY A.1: Directions

Have at least one complete set of basal readers available that teachers can examine. Although basal readers are very familiar to professionals in reading and to elementary teachers, most postelementary teachers have never had an opportunity in their adult life to look at one.

Explain the pieces that make up a basal reader series (e.g., readers, workbooks, tests) and how these pieces are designed to be used together in actual classroom use.

Depending on the size of the group you might demonstrate this using either transparency copies of selected pages from the pieces or the actual pieces themselves.

NOTE: Keep the basal readers close at hand to use later in discussing reading skills and narrative and expository text.

ACTIVITY A.2: Directions

Distribute one copy of handouts A.2a and A.2b to each participant. Ask them to look over the word lists while you explain that these are only two examples of many such word lists. Explain also that the words are ones that students very simply should learn to recognize immediately at sight. Usually the words on a word list are included simply because they appear frequently. If a student is able to recognize the words quickly precious time that could be spent on comprehending the message isn't lost trying to decode the word. Suggest that the teachers observe that most of these words are "service words" (e.g., the, and) while relatively few are what they would consider content vocabulary.

Explain that the Dolch List[1] was compiled some time ago and has become one of the most used word lists in existence while the Great Atlantic and Pacific Sight Word List (A & P List)[2] is more current. First published in 1972 the A & P List is a compilation of the words most frequently found in the reading material of children in grade 3. Innumerable other word lists also exist.

[1]Dolch, E. W., Teaching Primary Reading, Garrard Press, Champaign, 1941, pp. 196-215.

[2]Otto, W., & Chester, R. "Sight Words for Beginning Readers", Journal of Educational Research, 65:10, July-August, 1972, pp. 435-443.

HANDOUT A.2a

Dolch Basic Word List*

A	did	him	of	some	were
about	do	his	off	soon	what
after	does	hold	old	start	when
again	done	hot	on	stop	where
all	don't	how	once	take	own
always	down	hurt	one	tell	which
am	draw	I	only	ten	white
an	eat	if	open	know	who
and	eight	in	or	that	why
any	every	into	our	the	will
are	fall	is	out	their	wish
around	far	it	over	them	with
as	fast	its	pick	then	work
ask	find	jump	play	there	would
at	first	just	please	these	write
ate	five	keep	pretty	they	yellow
be	fly	kind	pull	think	yes
because	for	laugh	put	this	you
been	found	let	ran	those	your
before	four	light	read	three	thank
best	from	like	red	to	
better	full	little	ride	today	
big	funny	live	right	together	
black	gave	long	round	too	
blue	get	look	run	try	
both	give	made	said	two	
bring	go	make	saw	under	
brown	goes	many	say	up	
but	going	may	see	upon	
buy	good	me	here	us	
by	got	much	seven	use	
call	green	must	shall	very	
came	grow	my	she	walk	
can	has	myself	show	want	
carry	had	drink	sing	warm	
clean	have	never	sit	was	
cold	he	new	six	wash	
come	help	no	sleep	we	
could	her	not	small	well	
cut	away	now	so	went	

*From Dolch, E. W., Teaching Primary Reading, Garrard Press, Champaign, 1941, pp. 196-215.

HANDOUT A.2b

Great Atlantic and Pacific Sight Word List (A & P List)*

the	do	down	tell	used	Mrs.
a	each	my	after	food	great
to	will	no	Mr.	saw	father
and	up	go	man	different	along
of	many	get	may	live	night
in	we	now	much	well	took
you	then	long	does	any	sentence
is	her	find	say	school	story
he	or	look	same	even	land
it	out	made	been	under	never
that	some	just	take	line	always
was	them	big	only	because	sentences
on	write	very	old	thought	play
for	their	back	away	next	began
are	words	first	children	small	give
they	about	way	help	every	years
I	by	over	looked	going	below
with	like	too	why	want	boys
his	see	than	work	something	also
said	so	good	through	earth	head
at	if	use	here	last	grow
as	these	day	animals	men	set
have	make	where	place	plants	paper
she	into	called	before	read	it's
what	him	me	three	left	morning
one	other	went	home	hear	I'll
this	word	put	house	show	while
all	would	around	again	end	soon
had	water	new	another	don't	let
from	little	know	number	found	hard
be	two	come	our	eat	hearts
can	has	who	must	boy	side
but	did	things	off	need	until
there	people	its	name	still	should
not	an	came	mother	keep	sometimes
when	which	right	asked	together	own
how	could	air	picture	sun	dog
were	time	sound	most	us	door
your	more	think	part	got	once

*Includes first 2, 3, 4 words. The complete list can be found in: Otto, W., & Chester, R. "Sight Words for Beginning Readers", Journal of Educational Research, 65:10, July-August, 1972, pp. 435-443.

ACTIVITY A.3: Directions

Most postelementary teachers haven't the foggiest idea of what "phonics" means. Explain to them that you aren't anticipating that they need to learn phonics to the point that they will teach any of it, but that you thought they might like to take a look at some phonics generalizations to get a feel for what is meant by "phonics." Distribute one copy of handout A.3a to each participant.

Explain that printed on this handout are only a few of the phonics generalizations which may be taught at the elementary level. Many of the teachers in the group undoubtedly learned these generalizations as young students but probably internalized them so that they are no longer aware that they ever learned them.

Important: Make sure to explain that these are part of the content of the reading curriculum for the elementary level, but not for them with content-area reading in the postelementary level!

HANDOUT A.3a

Sample Phonics Generalizations Taught at Elementary Level

Kindergarten

Visual discrimination of letters and words

Auditory discrimination of beginning and ending sounds in words

Grade 1

Sound-Symbol Relations: Consonants

Example: When c and h are next to each other, they make only one sound, as in peach.

Sound - Symbol Relations: Vowels

Example: When a vowel is in the middle of a one-syllable word, the vowel is short, as in dress.

Grade 2

Sound-Symbol Relations: Vowels

Example: The r gives the preceding vowel a sound that is neither long nor short, as in horn.

Grade 3

Sound-Symbol Relations: Vowel Clusters

Example: The two letters ow make the long o sound as in own.

Syllabication: VCV and VCCV generalizations (v represents vowel and c represents consonant)

Example: When a VCCV pattern occurs in a word in which there are additional letters, the word will usually be divided between the two consonants as in rab/bit and win/dow.

ACTIVITY A.4: Directions

Teachers at postelementary levels rarely have an opportunity to examine content-area texts for other grade levels. Doing so at this point should help them to understand the three points that were just made.

Ask the teachers to get into small groups by content-area. Have ready for each group several books from their content-area designed for all grade levels from kindergarten/grade one through college level. (The reading teacher(s) at the elementary level should be happy to let you borrow these for a few days.) The books do not need to be about the same topic (e.g., all science books do not need to be about biology; all social studies books do not need to be about U.S. history).

Give each teacher a copy of handout A.4a. Allow the groups 15-20 minutes to examine the books and to identify which of the features listed on the handout are most readily observable in their content-area.

At the end of the allotted time, call the groups back together and ask for a report from them regarding their observations.

Summarize the points made by the groups. In general, of course, all points become more complex. Much of what they report for the early elementary grades, however, should be typical of narrative text (i.e., text related in a story-type fashion with parallels readily drawn between the reader's background and the topic being discussed). Much of what they report for the postelementary grades should be more reminiscent of expository text (i.e., text related in a journalistic style with many assumptions made about the reader's background and interest in the topic).

HANDOUT A.4a

The textbooks you have been given are intended for students from early elementary school through senior high school. Examine the books to discover in what ways the books change. Note also at approximately what grade level these changes begin. You might find it helpful to compare them on the following points:

1. Physical appearance
   - Size of print
   - Style of print
   - Amount of white space per page
   - Photographs, pictures, other graphic aids
2. Language used
   - Sentence length
   - Sentence complexity
   - Vocabulary
3. Presentation of ideas
   - Organization of ideas
   - Involvement with reader
   - Assumptions of reader background
   - Discussion of concepts: concrete vs. abstract

Session B: Making Assignments

Making an assignment is only one task that a teacher completes routinely. By following fairly simple guidelines a teacher can accomplish that routine task and at the same time promote more efficient reading behaviors. The purposes of this session will be:

1. To demonstrate the ingredients of a good assignment.

2. To estabish the need for incorporating these ingredients into each assignment that is made.

*PROCEDURAL NOTE: TRAN. B.1 summarizes the purposes.

Outline for Session B

I. Setting a Context

*Activity B.1 - Individual, Guided Practice: Setting Context, Outside Source

*Activity B.2 - Individual, Guided Practice: Setting Context, Inside Source

*Presentation

. Context comes from an inside or an outside source

. What a context should include

. Why a context is necessary

II. Establishing a Purpose

*Activity B.3 - Individual, Guided Practice: Establishing Purpose

*Presentation

. What purpose does

. Why purpose is necessary

. What purpose should be like

*Handout B. 3 - Intentions behind reading assignments

III. Pointing out Special Features of Text

*Presentation

. Why structure of text must be examined

. Structural factors to consider

*Activity B.4 - Individual, Application: Features of textbook

*Activity B.5 - Individual, Application: Features of resource book

IV. Summary and Conclusion

*Presentation

. Review of components of a good assignment

*Activity B.6 - Individual, Application: Writing an assignment

*Activity B.7 - Small group, Application/Discussion: Text features

Materials Needed for Session B

- 1 copy each of Transparencies 1 through 15
- Overhead projector and screen
- 1 copy for each participant of Handouts B.1a, B.1b, B.2, B.3, B.4, B.5, B.6 (Have extra copies of B.4 and B.5 available also)
- 1 copy for each content-area workgroup of Handout B.7
- Each participant should bring 1 copy of each textbook used in his/her class plus 1 copy of each supplemental resource book used fairly frequently

Session B: Making Assignments

I. Setting a Context

*PROCEDURAL NOTE: Distribute HANDOUT B.1a

Read this passage.

...what were you trying to do as you read the passage? Were you --

- trying to get a clear picture of the action?

- trying to figure out what was happening?

- trying to understand the action?

Now, think for a minute. As you were trying to figure out what the action was, how much of what you read got stored in your memory? What do you remember from the passage? Probably very little, although you could well remember some bits of information from the passage.

*PROCEDURAL NOTE: Distribute HANDOUT B.1b

Now, look at this cartoon. It is intended to be an illustration of the action for the passage. With this cartoon in front of you, again read the passage. ...now what did you find yourself trying to do? Weren't you trying to find points where the text connected with the cartoon? Chances are you would now remember more of the information presented in the passage.

The cartoon acts as a framework for the passage you read. It helps you make sense of the text. This is an example of a context that comes from an outside source--i.e., from another person.

*PROCEDURAL NOTE: Conduct Activity B.2

Now read this passage... Now that you understand the authors intended this passage to be about doing the laundry, reread it. Does the passage make better sense now? Being given the topic for the passage should trigger a context in a different way than the cartoon did for the balloon passage. This is an example of a context that comes from an inside source--i.e., from yourself. Once you knew the topic of the passage your previous experience helped you to make sense of the passage by creating a context based on that previous experience.

*PROCEDURAL NOTE: See TRAN. B.2

A context provides a setting for a passage. A context comes from either an inside source (prior knowledge of an individual) or an outside source (a plan drawn up by someone else). The purpose of a context is to provide the reader with enough cues to understand a passage to be read.

Without cues (i.e., a context) the reader will do much as you did with the balloon passage the first time through. The reader will spend more time trying to create a structure for the passage than will be available to spend learning the information. If the reader is given a context more of the study time can be spent attaching the information to the structure. It will not be necessary for the reader to first try to create the structure.

Just as you experienced, a context can be set up for a reader by introducing a structure from an outside source or by triggering a context from the student's memory. Either one is fine. But most of the time the context you prepare will be a combination of cues from an outside source and the inside source. To make that clearer, we need to think for a minute about what a context is.

*PROCEDURAL NOTE: See TRAN. B.3

A good context will:

1. Indicate what's familiar by triggering ideas already in the reader's head because of previous experiences in class. Some research results have been reported that indicate to fully understand a student depends not only on what he hears but especially on an explanation of the implications of this information in light of what he/she already knows about the subject (Bransford & Johnson, 1973).

2. Indicate a little about what's ahead--this is to eliminate the reader spending time creating a structure for the information rather than learning the information itself.

3. Explain briefly how the new information will fit together with the old information.

When all 3 ingredients are put together the good context that is created results from triggering an inside source (the familiar), combining that with an outside source (the structure for the new) and fitting the two together.

*PROCEDURAL NOTE: See TRAN. B.4

How lengthy should all this be? Not very. Only a few words should be necessary--you aren't teaching the lesson here, you are paving the way for some meaningful learning to take place. Because the context created should be brief shouldn't diminish its importance; the context creates the setting for the learning to take place.

II. Establishing a Purpose

*PROCEDURAL NOTE: Conduct Activity B.3

*PROCEDURAL NOTE: See TRAN. B.5

In this activity most of what you learned about this room and the people that are in it could be said to be incidental learning. Some of you learned some things while some of you learned others, all for a variety of reasons. Incidental learning is not all bad; it gives us a comfortable cushion of knowledge about the world in general. But, incidental learning is not the only kind of learning that should take place, especially in a classroom. The other kind of learning that should take place is intentional learning. Intentional learning is learning that you as the teacher want the students to specifically learn in your class. A purpose statement in an assignment reflects your intention in giving that assignment. A purpose statement focuses your attention.

Think back a minute to your reactions when I told you to look around the room--what kind of questions did you have?

(NOTE: Try to elicit questions such as the following from the group. Write them on the chalkboard.)

- What kinds of things should I remember?

- How many things should I remember?

- Why am I looking for these things?

- What's the XO!X reason for doing this?

All of these are questions one or more students might have when given an assignment to "read pp. x-x for tomorrow."

In the exercise we just did, if you didn't know what I had in mind what might happen is that:

- you will have no way to focus your attention

- you will expend effort but it will be scattered and in the end you may have nothing to show for it.

- you may spend time resenting the time you must spend with this exercise when you could be doing almost anything else that would be more appealing!

In time you might even decide to stop trying to do something simply because you can see no reason for trying to do it!

*PROCEDURAL NOTE: See TRAN. B.6

When given a reading assignment without a purpose, it is conceivable that eventually the students might stop reading simply because they see no reason to read!

*PROCEDURAL NOTE: See TRAN. B.7 and B.8

So, purpose is necessary because purpose provides a focus. But, how much purpose is necessary? The amount of purpose you prescribe can be either broad or narrow but it must reflect your reason for wanting the assignment to be completed.

What might your intention be in giving a reading assignment?

Your intention behind giving a reading assignment is really your reason for wanting the students to read a particular piece of text. There simply must be a reason for wanting the students to read something other than because those pages are the next in the textbook! As you set a purpose, you are sharing that reason.

You may have other intentions for giving an assignment, but here are a few I've thought of. Let's start looking at these and see what else you might add.

*PROCEDURAL NOTE: Distribute HANDOUT B.3. Read through it with participants.

*PROCEDURAL NOTE: See TRAN. B.9

Remember that your intention translated into the purpose for reading can be general or specific, long or short, but it must be present. An easy way to remember this might be to keep in mind that every reading assignment must include a "to"....i.e., Read pp. 1-10 to _____.

III. Pointing out Special Features of the Text

In some respects both the context you create and the purpose you establish are dependent upon what we will discuss next: the structure of the materials you will assign to be read. In fact, to do a good job of creating context and establishing a purpose you need first to carefully examine the materials you will be using. What will you be looking for in the materials?

*PROCEDURAL NOTE: See TRAN. B.10 and B.11

You will be looking for problems that the reader could encounter and features that could help the reader to learn more efficiently. Where or how will you find these? By considering these things:

1. Vocabulary. You will be looking for unfamiliar words that could delay learning and also for familiar words that are used in an unusual way. These words can cause confusion for the reader. Another session will be devoted to vocabulary so we won't say anything more about it today.

We will spend more time today on the additional points:

2. features of the regular textbook,

3. features of special resource books and

4. the format of the specific text to be read.

The best way for you to understand what is available in the textbook your students most often use is for you to examine that textbook. So, let's do it! This is a textbook checklist for you to follow.

*PROCEDURAL NOTE: Conduct Activity B.4

Now that you have completed an examination of the text we need to consider a crucial question: How do the students learn how to use the features that you have determined to be of high importance?

We are, however, going to put this off for a minute while we consider two other factors. (This will give you a little thinking time!)

First of all, special resource books. In addition to the regular textbook, what other materials must the students use, and why? Complete one of these worksheets for each special resource.

*PROCEDURAL NOTE: Conduct Activity B.5

Now, for the last point to be considered: the format of the specific text to be read. When you make an assignment to read a specific piece of text you will be creating a setting for that information and you will be establishing a reason for reading that particular piece.

*PROCEDURAL NOTE: See TRAN. B.12, B.13 and B.14

Now-in view of what you've examined in the regular textbook and what you've considered with the special resource materials-what is present in the specific materials you are assigning that will (a) cause problems for the reader and (b) provide special helps to the reader? The problems may be caused by vocabulary, structural features of the text, special skills the student will need to use the materials. The aids may be highlighted words, bold-faced headings, special graphics. The reader will learn more effectively if you point these things out as you are making the assignment.

IV. SUMMARY AND CONCLUSION: Making an assignment

Summary:

*PROCEDURAL NOTE: See TRAN. B.15

Three ingredients make up a good assignment: creating a context, setting a purpose and pointing out special features of a text.

*PROCEDURAL NOTE: Conduct Activity B.6

Distribute one copy of HANDOUT B.6 to each participant. Review again the 3 ingredients of a good assignment. (See TRAN. B.15). Ask the participants to consider how they could incorporate them into their everyday routine and to begin by trying their hand at writing one such assignment.

Allow plenty of time for the participants to complete writing their assignment.

*PROCEDURAL NOTE: Conduct Activity B.7

Divide the participants into content area groups. Distribute one copy of HANDOUT B.7 to the designated leader in each group. Allow time to work and to ask questions.

Conclusion: Bring the groups back together to share the results of their discussions.

Transparencies for Session B

TRAN. B.1

Purposes of Session B:

- Demonstrate ingredients of a good assignment
- Show need for incorporating ingredients

TRAN. B.2

A context comes from:

- An inside source
- An outside source

TRAN. B.3

A good context will include:

- What's familiar
- What's ahead
- How the two relate

TRAN. B.4

A good context briefly creates a setting for learning.

TRAN. B.5

A PURPOSE distinguishes between:

- Incidental learning
- Intentional learning

TRAN. B.6

Giving assignments without PURPOSE can result in:

- wasted effort
- resentment
- later refusal to try

TRAN. B.7

A PURPOSE provides FOCUS and direction to intentional learning.

TRAN. B.8

A PURPOSE...

- Can be broad or narrow
- Must reflect your intention

TRAN. B.9

A purpose explains the reason for reading.

TRAN. B.10

Examine structure to:

- Spot potential problems
- Identify reader aids

TRAN. B.11

Structural factors to consider:

- Vocabulary
- Features of regular textbook
- Features of special resource books
- Format of specific text to be read

TRAN. B.12

For each specific reading assignment, alert the student to:

- Potential problems
- Potential aids

TRAN. B.13

Potential problems can result from:

- Vocabulary
- Structural features of text
- Special skills needed to interpret the materials

TRAN. B.14

Potential aids can be provided by:

- High-lighted words +
- Bold-faced headings +
- Special graphs

TRAN. B.15

3 Components of a Good Assignment

- Context
- Purpose
- Special features of text

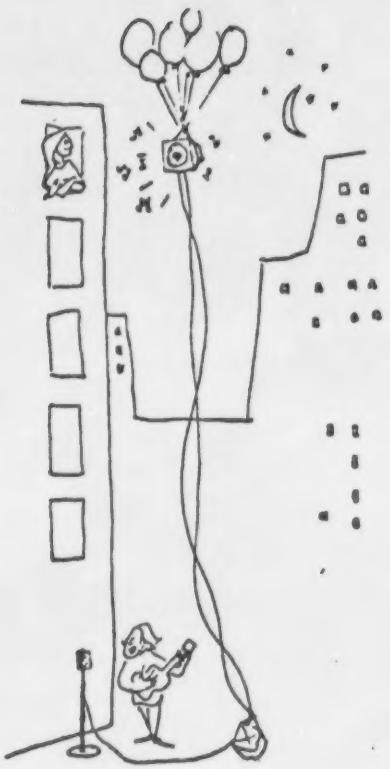
HANDOUT B.1a

Read this passage.

If the balloons popped the sound wouldn't be able to carry since everything would be too far away from the correct floor. A closed window would also prevent the sound from carrying, since most buildings tend to be well insulated. Since the whole operation depends on a steady flow of electricity, a break in the middle of the wire would also cause problems. Of course, the fellow could shout loud enough to carry that far. An additional problem is that a string could break on the instrument. Then there could be no accompaniment to the message. It is clear that the best situation would involve less distance. Then there would be fewer potential problems. With face to face contact, the least number of things could go wrong.

From: Bransford, J.D. & Johnson, M.K., "Considerations of some problems of comprehension," in W.G. Chase, Ed., Visual Information Processing, New York, Academic Press, 1973.

HANDOUT B.1b



From: Bransford, J.D. & Johnson, M.K., "Considerations of some problems of comprehension," in W.G. Chase, Ed., Visual Information Processing, New York, Academic Press, 1973.

ACTIVITY B.2: Directions

1. Distribute one copy of Activity Handout B.2 to each teacher.

2. Allow sufficient time for all to read (approximately 4-5 minutes).

3. Ask what they thought the paragraph was about and list all their ideas on the chalkboard.

4. List also the following topics (if not already included) that others have considered to be the topic: nothing at all; just some sentences; stuffing papers; clearing your desk.

5. Announce that the authors intended this paragraph to be about washing clothes.

6. Ask the participants to read the paragraph again to see if the paragraph makes better sense now that they have a context, or frame of reference, for it. (They should indicate that yes, the sentences do make more sense now.)

HANDOUT B.2

Directions: Read this paragraph.

> The procedure is actually quite simple. First you arrange things into different groups. Of course, one pile may be sufficient depending on how much there is to do. If you have to go somewhere else due to lack of facilities that is the next step, otherwise you are pretty well set. It is important not to overdo things. That is, it is better to do too few things at once than too many. In the short run this may not seem important but complications can easily arise. A mistake can be expensive as well. At first the whole procedure will seem complicated. Soon, however, it will become just another facet of life. It is difficult to foresee any end to the necessity for this task in the immediate future, but then one never can tell. After the procedure is completed one arranges the materials into different groups again. Then they can be put into their appropriate places. Eventually they will be used once more and the whole cycle will then have to be repeated. However, that is part of life.

What do you think this paragraph is about?

From: Bransford, J.D., & Johnson, M.K., "Considerations of some problems of comprehension," in W.G. Chase, Ed., Visual Information Processing, New York, Academic Press, 1973.

ACTIVITY B.3: Directions

1. Tell the participants that you are going to try an experiment in which they will use their powers of observation. You will give them two minutes to look around the room--at all the physical aspects of the room and at the people in the room. After two minutes you will ask them a few questions about what they have observed. Don't give any more directions, but do announce the beginning of the timing.

2. Time the observation period for exactly 2 minutes.

3. At the end of two minutes, ask questions similar to the following. (Hint: It would work best if you have the questions mimeographed beforehand, ready to distribute):

- How many light fixtures are on in the room?

- The tallest plant in the room is in what corner?

- What color is the projection screen?

- On what wall is the largest chalkboard?

Most questions will not be answered, or will not be answered correctly.

4. Explain next that to continue the experiment you will tell them what you will ask them to observe in the room. This time, instead of giving them two minutes, they may have as much time as they need to determine the answers. Tell them that when they have the answers, they should raise their hand (or give some other indication they are ready).

5. Give them questions similar to the first set. (Hint: It would work best if you have the questions mimeographed beforehand, ready to distribute.)

6. Begin timing when they all have read the questions. It should take approximately 30 seconds for them to find the answers. Discuss the answers and be sure to tell them how long it took for them to find the answers when they knew what they were looking for.

7. Explain that just as their powers of observation were put to the most efficient use when they could be focused, i.e., when they were given a purpose for which to use these powers, that the student experiences a similar situation when given an assignment.

HANDOUT B.3: Intentions behind reading assignments.

Your intention (listed in no particular order) behind giving an assignment might be:	The purpose in translation for the student might be:
. to give the student an <u>overview</u> of topic. (1)	. read to get an idea about... or . read to get a general background about... or . read to determine the major characters in... or . read to discover the general causes of...
**********	
. to <u>supplement</u> material already read or ideas already discussed. (2)	. read to find out additional information about...
**********	
. to give <u>another perspective</u> to a topic already discussed. (3)	. read to learn another viewpoint about...
**********	
. to <u>reinforce</u> material already learned. (4)	. read to find points that support or illustrate what we have already discussed.
**********	
. to <u>review</u> a topic. (5)	. read to see how all the pieces we've discussed fit together.
**********	
. to provide <u>enrichment</u> or elaboration for a topic. (6)	. read to find points that add to what we've already discussed about...
**********	
. to <u>practice</u> a technique. (7)	. read to put into practice what we've just been doing.
**********	

Not all of these may be appropriate for your content area. Which ones are? Can you think of others?

Others?

REMEMBER: <u>Every</u> reading assignment <u>must</u> include a "to" statement: e.g., Read pp. x to z to _____.

ACTIVITY B.4: Directions

Distribute one copy of Handout B.4 to each participant. Read through the sheets with the participants explaining briefly (if necessary) what each is. Instruct them to determine quickly if each feature is present or not present. Tell them also to consider the importance of each feature that is present for the learning the student is to do.

Invite the participants to work together in content-area groups. Allow them at least 15 minutes to work.

ACTIVITY B.5: Directions

Distribute copies of Handout B.5 to each participant. One copy of the handout will be necessary for each special resource the teacher assigns.

Again, invite the participants to work together in content-area groups.

HANDOUT B.4: Features of the Textbook Most Often Used

Name of textbook analyzed: _____

Overall organization of the textbook.

The organization of a textbook can compliment or contrast the organization of the course you have planned. Keep this in mind as you examine the organization of this textbook. How important is it for the student to be aware of this organization?

This textbook is organized into:	Present	Not Present	Important for students to be aware? Lo 1 2 3 4 5 Hi
Parts/Sections/Units	⬭	⬭	
Units/Sections/Chapters	⬭	⬭	
Units/Chapters/Sections	⬭	⬭	

Organization of a segment of the textbook (Note: "segment" as used here corresponds to a traditional "chapter").

Determine if each feature listed below is part of the textbook you are analyzing. For each feature that is present, indicate how important the use of that feature is for the students in your class if they are to learn the material.

	Present	Not Present	Important for students to use? Lo 1 2 3 4 5 Hi
1. Title	⬭	⬭	
2. Overview of segment of text	⬭	⬭	
3. Bold-faced (or colored) subheadings	⬭	⬭	
Number of different levels of subheadings: _____			
4. Pre-reading questions	⬭	⬭	
5. Highlighted words (bold-faced or italicized at first use)	⬭	⬭	

	Present	Not Present	Important for students to use? Lo 1 2 3 4 5 Hi
6. Marginal notes or comments	⬭	⬭	1 2 3 4 5
7. Set apart from the body of the text: comments on or explanations of the implications of a statement made in the text	⬭	⬭	1 2 3 4 5
8. Set apart from the body of the text: elaborations (for enrichment) of statements made in the text	⬭	⬭	1 2 3 4 5
9. Summary of a segment of the text	⬭	⬭	1 2 3 4 5
10. Conclusion for a segment of text	⬭	⬭	1 2 3 4 5
11. Questions at the end of a segment:			
Fact questions	⬭	⬭	1 2 3 4 5
Thought questions	⬭	⬭	1 2 3 4 5
12. Practice exercises at the end of a segment	⬭	⬭	1 2 3 4 5
13. Application activities at the end of a segment	⬭	⬭	1 2 3 4 5
14. Suggestions for supplementary readings	⬭	⬭	1 2 3 4 5

Graphic Aids

Each graphic aid included in a textbook has been chosen to illustrate or explain a particular point made in the text. Determine if each type of graphic aid listed below is included anywhere in the textbook you are analyzing. For each graphic aid that is present, indicate how important an understanding of that aid is for the students in your class if they are to learn the material.

	Present	Not Present	Important for students to understand? Lo 1 2 3 4 5 Hi
1. Photographs	⬭	⬭	1 2 3 4 5
2. Diagrams (drawings)	⬭	⬭	1 2 3 4 5
3. Cartoons	⬭	⬭	1 2 3 4 5

	Present	Not Present	Important for students to understand? Lo 1 2 3 4 5 Hi
4. Maps	⬭	⬭	1 2 3 4 5
5. Charts	⬭	⬭	1 2 3 4 5
6. Graphs	⬭	⬭	1 2 3 4 5
7. Tables	⬭	⬭	1 2 3 4 5

Supplements

Some textbooks include one or more of the following supplements but few textbooks include them all. Determine if each supplement listed below is included in the textbook you are analyzing. For each supplement that is present, indicate how important an understanding ofhow to use that supplement is for the students in your class if they are to learn the material.

	Present	Not present	Important for students to understand its use? Lo 1 2 3 4 5 Hi
1. Footnotes	⬭	⬭	1 2 3 4 5
2. Bibliography	⬭	⬭	1 2 3 4 5
3. Appendix	⬭	⬭	1 2 3 4 5
4. Glossary	⬭	⬭	1 2 3 4 5
5. Index	⬭	⬭	1 2 3 4 5
6. Table of contents	⬭	⬭	1 2 3 4 5

HANDOUT B.5: Special Resource Material

Note: You will need one worksheet for each special resource you assign your students to use.

Title of Special Resource: _____

How often will student need to use this resource? (Check one)

_____daily

_____weekly

_____occasionally

For what reason(s) will the student need to use this resource? (Check all that apply)

_____explain terminology

_____interpret diagrams

_____supply specific information

_____other

What special skills does the student need to use these materials? (Check all that apply)

_____to alphabetize

_____to use guide words

_____to understand a special code

_____other

When and how will the student learn these special skills? Write at least one sentence of explanation for each special skill you indicated the student must use:

HANDOUT B.6: Making an Assignment

Remember that there are 3 components of a good assignment:

1. A context that briefly creates a setting for learning.
2. A purpose that explains the reason for reading, i.e. "Read pp. x-y to _____".
3. An alert that points out special features of the text that could cause problems or provide assistance.

Problem: How can you incorporate these into your everyday routine? As a start, try your hand now at writing one such assignment.

HANDOUT B.7: Problem for Group Discussion

How and when can the students be taught about the features of the regular textbook? How can the teaching staff determine that the students can perform the skills necessary to use the special resource materials?

Session C: Factors that Contribute to the Complexity of Text

Many factors contribute to the complexity of printed text. Readability formulas have become for some the means to determine the difficulty level of materials. These formulas, however, do not address all of the factors that together determine complexity. The purposes of this session will be:

1. To familiarize teachers with several factors that contribute to making a text difficult.

2. To offer suggestions for dealing with the factors that make a text difficult.

Outline for Session C

I. Factors traditionally thought to make text difficult

*Presentation

*Activity C.1 - Individual. Demonstration/Guided Practice: Use of a readability formula

II. Additional factors thought to make text difficult

*Presentation

*Activity C.2 - Individual, Guided Practice: Reading difficult text

III. Determining the difficulty of text

*Presentation

*Activity C.3 - Individual, Guided Practice: Use of cloze technique

IV. Determining the proper difficulty level for materials

*Presentation

V. Conclusion

*Presentation

*Activity C.4: Small group, Application: Determining difficulty level of materials

Materials Needed for Session C

Not all materials have been developed for this session.

Session C: Factors that Contribute to the Complexity of Text

I. Factors traditionally thought to make text approach: readability formulas difficult

*Presentation

For many years now it has been traditional to use a readability formula to determine the grade level for a text passage. Readability formulas were developed to provide relatively simple answers to relatively difficult questions such as: How difficult is this passage to read? Will the students be able to read this passage?

Sometimes simple answers may be too simple. They may provide too little information and thus not do justice to a complex question. In the case of readability formulas that is exactly what happened. To understand what all this means we need to take a closer look at readability formulas. Most of these formulas require a great deal of counting of (1) a specific number of words, (2) the number of sentences, (3) the number of syllables in the words or the number of difficult words. The result of working through a formula is a specific number which is reputed to be the grade level equivalent of that passage.

There are two advantages of working with a readability formula:

1. It is relatively easy to administer, provided you know how to syllabicate (if the formula calls for you to do that).

2. The formula gives you a numerical figure which at the very least is a "ball park" estimate for the difficulty level of the material.

*Activity C.1: Demonstration for using the Fry Graph for estimating readability. This method was chosen for demonstration purposes because it can be used for upper grade levels. Handout C.1 is a passage of text that has the number of syllables and number of sentences tallied for the first 100 and the last 100 words. Handouts C.2 and C.3 detail the procedures for applying the Fry graph. Guide the participants as they determine the readability level of this passage according to the Fry graph.

Now that we have a readability level, what do we do with it? What can we do with it? Here we have identified one problem of using a readability formula: about the only thing we can do is attempt to match that with the approximate reading level of the

students...provided we are able to get that information. If the two approximations don't fit, we can attempt to rewrite the materials but that requires tremendous amounts of time, a commodity which is usually in short supply.

There are other problems (of a much greater magnitude) with using a readability formula. One of these you ought to be able to identify very quickly. Read through the passage on Handout C.1 (Allow time for them to read.) Are you able to make sense of the passages? Probably not because most of you don't have the background knowledge to help you understand the message the passage is intended to convey. A readability formula does not take into consideration the background knowledge of the reader.

Other factors a readability formula does not address include (elaborate on each of these points):

- the way a sentence is constructed. A sentence with multiple clauses is treated by a readability formula in the same way as is a simple sentence.

- the number of syllables does not always indicate the difficulty of a term. One or two syllable words can sometimes be used to designate relatively difficult concepts, e.g., qurk, piston, justice. Words of more syllables, however, can designate relatively simple concepts, e.g., apartment.

- short sentences are not necessarily easier to understand than longer ones.

Readability formulas overlook more important factors than they address. Should we use them at all? Yes, but only if they are used with full knowledge of their limitations and with the expectation that additional means also must be used to examine the passages.

(Note: The remainder of this session includes only the central idea of what should be presented, not an entire prototype text.)

II. Additional factors thought to make text difficult

*Presentation: Several factors are thought to contribute to the complexity of text, including:

- reader's background knowledge of the subject

- vocabulary used in the passage

- concept load (more concepts in fewer words denotes an especially difficult text)

- the number of times the reader must backtrack while reading in order to make sense of the text (or, the number of inferences the reader must make while reading)

*Activity C.2. Simulation to allow reader to experience all of the factors just identified. The passage the participants are given to read could be a selection from a medical textbook.

III. Determining the difficulty of text

*Presentation. There are several things a teacher can do in order to determine the suitability of reading materials. Not all of these measures carry the same weight, but in combination they can help to make an impact. These measures include:

- try to get some idea of the students' familiarity with specific subject matter by looking at the curriculum for earlier grade levels or by giving a pretest

- ask students to share their perceptions of a text

- identify potentially troublesome vocabulary and work with it before assigning the material to be read

- consider the results of a readability formula along with the estimates of the reading level of the students.

- incorporate the 3 ingredients of a good assignment in every assignment made (see Session B)

- use the Cloze technique to determine if the students can understand the text. (See Handout C.4)

*Activity C.3. Simulation to provide the participants with an opportunity to experience reading a text that has been prepared according to the Cloze technique.

IV. Determining the proper difficulty level for materials

*Presentation. Introduce the idea of reading levels, i.e., independent level, instructional level and frustration level. Emphasize that the teachers approach to using the materials should be

different if, for example, the difficulty level of the materials is at the instructional level rather than the independent level. This example situation would call for more teacher guidance.

V. Conclusion

*Presentation. Summarize the ideas presented in each section.

*Activity C.4. Direct the participants to work in teams of 2 or 3 to use the ideas presented in this session to assess the difficulty level of one selection of their choosing. After they have determined the difficulty of the materials, tell them to devise a plan for reconciling that with the ability level of the students.

Handout C.1

Word Concepts[1]

	Number of syllables per line
Propositions consist of abstract word concepts. These	13
are the entries in the lexicon of semantic memory, and may be	19
represented by one or more words in the surface structure.	15
To distinguish between words and word concepts, the word	13
concept is written in capital letters in the proposition.	17
The actual word or words which are chosen to represent the	15
concept are tokens for the abstract concept. It is important	16
to understand that the abstract concept may be represented by	17
a number of words in a given language. Since,[2] the word concepts	16
do not always map directly on to a none-word/token, at times	13
the token of the concept in the proposition will consist of	17
several words.[3]	4
The propositions themselves consist of two or more word	14
concepts, such that the first is a relation, the others arguments.	16
The relation is a connection between a set of arguments forming	19
a single idea. Propositions have been classified into three	17
distinct classes, based on the type of relation they contain:	15
Predication, Modification, and Connection. Each class of	16
propositions has certain constraints as to what kind of arguments	17
may be taken by the relation in forming a proposition.	17

Number of sentences: in first 100 words = 5.5
: in last 100 words = 5.8

Average numbers of sentences in the sample: _____ (Point 2 on the Handout C.2)

Number of syllables: in first 100 words = 153
: in last 100 words = 165

Average number of syllables in the sample: _____ (Point 3 on the Handout C.2)

Fry readability score: for first 100 words = _____
: for last 100 words = _____

Average Fry readability score: _____

[1]Taken from: Turner, A., & Greene, E. The construction and use of a propositional text base, Tech. Report No. 63, Institute for the Study of Intellectual Behavior, Boulder, Colorado, 1977.

[2]Last 100 word count begins here.

[3]First 100 word count ends here.

Handout C.2

The Fry Graph for Predicting Readability

1. Choose three one-hundred-word sample passages near the beginning, the middle, and the end of the book or selection. Skip all proper nouns.

2. Count the total number of sentences in each passage, estimating this number to the nearest tenth of a sentence. Add these three estimates together, and divide their sum by three. This gives you average number of sentences per 100 words for the total sample.

3. Find the number of syllables per hundred words. To do this, simply count all the syllables in the three samples, add these three counts together and then divide by three to get an overall average. This gives you average number of syllables per 100 words.

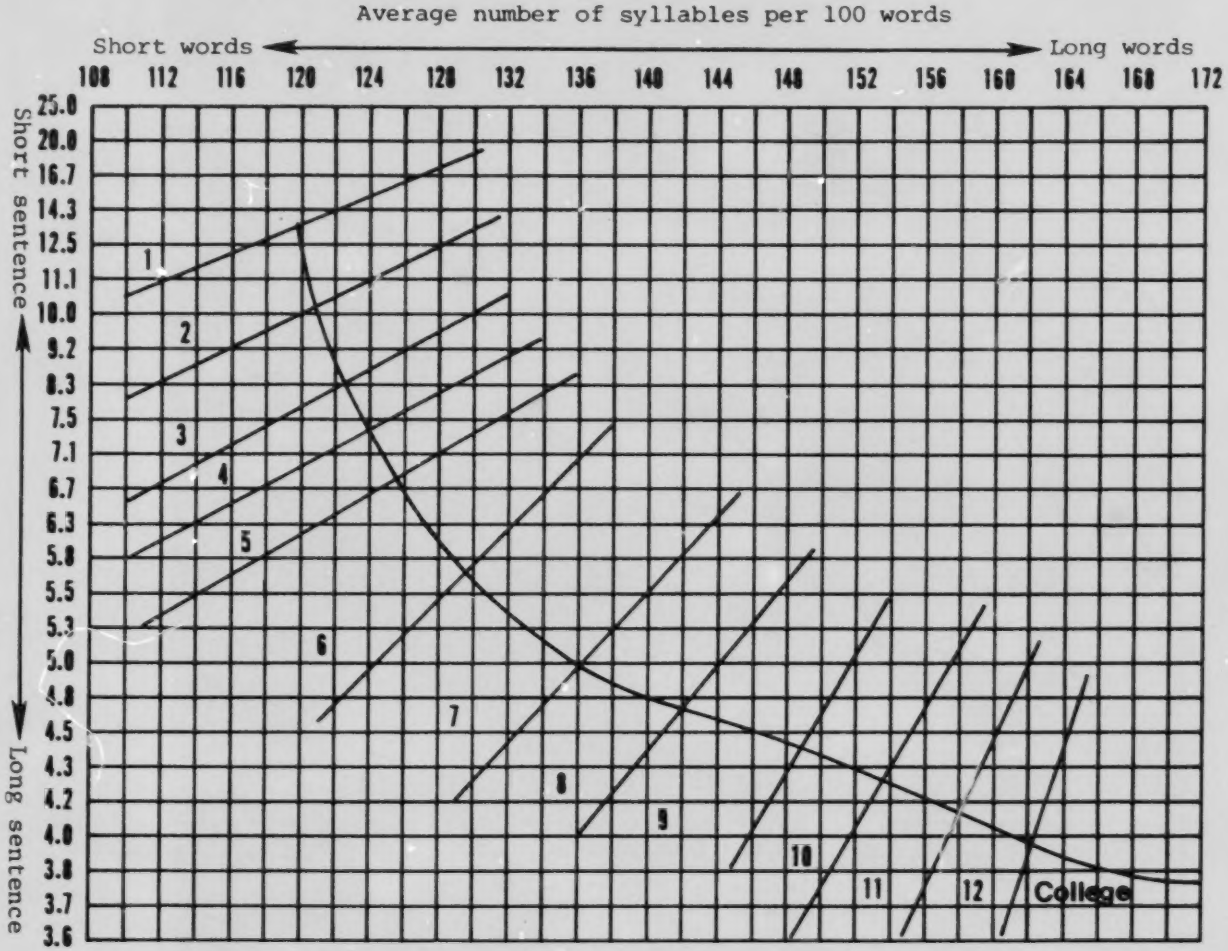
4. Now, enter the graph with the two figures above and plot where the two intersect. Most plot points will fall near the heavy curved line. The perpendicular lines mark off the approximate grade level areas.

Example:

	Sentences per 100 words	Syllables per 100 words
100-word sample, page 10	10.2	130
100-word sample, page 95	9.5	136
100-word sample, page 172	7.0	142
	3)26.7	3)408
Average	8.9	136

Plotting these averages on the graph, we find that that fall in the 6th grade area; hence, the book is about 6th grade difficulty-level. If your three selections vary a great deal in either sentence-length or syllable-count, then randomly select a few more passages and average them in before plotting.

[1]For demonstration purposes, the first 100 words and the last 100 words of the passage on handout C.1 were taken as the samples. Usually the 100 word samples would be from different sections of the textbook being sampled.



FRY GRAPH FOR ESTIMATING READABILITY

Edward Fry, Journal of Reading, April, 1968

Handout C.4

The Cloze Technique

1. Take a set of samples from throughout the selection to be tested. If you plan on checking the material with one class (30 or so readers) the sample must be at least 625 words or more in length. For several classes, 500 words is probably a large enough sample.

2. Type out the total sample, substituting for each 5th word (words 5, 10, 15, 20, and so on) a 15-space blank. To do a really good job, make five forms of this exercise, omitting words 1, 5, 10, etc. on Form One, words 2, 6, 11, etc. on Form Two, and so on.

3. Distribute the exercise to the class, and give them all the time they need to replace the omitted words as best they can. After they're through, average the number of words exactly replaced (no synonyms allowed) by the group. Divide this average by the total number of blanks to get average percentage of words replaced.

4. Multiply this figure by 1.67, and you will have a good estimate of the average comprehension you can expect from the group. Anything below 80-85% potential comprehension (approximately 50% exact replacement) indicates that the material is probably too difficult for this particular group.

Session D: Ideas Are Built with Words: Developing Content-Area Vocabulary

Students can successfully learn the ideas of a particular content area only if they first understand the vocabulary. Although most content-area teachers recognize this and try to help their students with new terminology, additional ideas for dealing with vocabulary are very frequently requested. The purposes of this session will be:

1. To offer suggestions to participants about ways to identify vocabulary that may need attention.

2. To assist teachers as they devise materials to help the students familiarize themselves with the specialized vocabulary they need to understand the subject matter.

Outline for Session D

I. Introduction

*Presentation

II. Words that need attention

*Presentation

*Activity D.1 - Individual/Small group, Application: Identifying vocabulary needs

III. Student background with word identification

*Presentation

*Activity D.2 - Individual, Guided Practice: Word Parts

*Activity D.3 - Individual, Guided Practice: Context

*Activity D.4 - Individual, Guided Practice: Combined Approach

IV. Content-area vocabulary development

*Presentation

*Activity D.5 - Individual, Demonstration/Participation: Familiarizing Terms

*Activity D.6 - Individual, Demonstration/Participation: Internalizing Terms

V. Conclusion

*Presentation

*Activity D.7 - Small group, Application: Vocabulary development

Materials Needed for Session

Not all materials have been developed for this session.

Session D: Ideas Are Built with Words: Developing Content-Area Vocabulary

I. Introduction

*Presentation. There are two basic reasons why vocabulary should be developed in a content-area class rather than in a separate class devoted only to vocabulary development. First of all, students cannot make sense of the ideas about a subject if they don't understand the meaning of the words used to discuss that subject. Secondly, word knowledge that is developed outside of a context is destined to be lost from memory very quickly. The words that students learn as part of the development of a line of thought within a content area are words that the student probably will retain for some time.

II. Words that need attention

*Presentation. Two types of words need to be attended to: (1) unfamiliar words and (2) familiar words that have a unique meaning when used in a particular content area.

Although the development of word knowledge is important to learning the content, there are many ideas which the teacher must develop. The time that is devoted to vocabulary development can be used very efficiently if some means can be developed to quickly identify the words that need attention. Some ideas on ways to identify these words:

- author/publisher code (e.g., italics, color, underlining)
- glossary of text
- pre-test for students
- student review of material to be assigned (Perhaps a rotating committee of students but more than one student should review the material.)
- teacher judgment of material
- fellow teacher (another content area) review of material

There are two things to be careful of:

1. Unfamiliar words will be easier to identify than will familiar words where the meaning used is unique. Such familiar words, however, can be a greater problem if they aren't identified.

2. Assuming that students will know a term can happen very easily. DON'T ASSUME students know the vocabulary. (This point, i.e., assumptive teaching, should be hit very heavily.)

*Activity D.1. This should be a two part activity. In the first part the teachers individually should examine their texts looking specifically for printed aids for new words. In the second part two teachers from different content areas should work together. They should identify for fellow teachers the terms that will be troublesome for students.

III. Student background with word identification

*Presentation. Student are taught during their elementary years to use two types of clues to help them to determine the meaning of an unfamiliar term: (1) the clues within the word and (2) the clues around the word.

The clues within the word: word parts. (This should include emphasis on prefixes, suffixes, combining forms and word roots.)

*Activity D.2. Simulation to allow participants the experience of working with each word part presented above.

The clues around the word: context. (This should include examples of as many types of context clues as possible.)

*Activity D.3. Simulation to allow participants the experience of working with context clues.

These two approaches are sometimes viewed as that, i.e., two approaches. The fact is, however, that the two in combination are what will help the reader to understand the use of a term in a particular situation. By examining word parts the reader can pick up specific clues to meaning that are then confirmed or denied by observing the context of the term in question.

*Activity D.4. Simulation to allow the participants to use both types of word identification skills in combination to determine meaning.

IV. Content-area Vocabulary Development

*Presentation. Identifying potentially troublesome words is only a first step. The next two steps are the most crucial. These steps require direction (1) to familiarize the student with the identified terms and (2) to help the students make those terms part of their content-area vocabulary.

*Activity D.5
*Activity D.6

In combination these activities should offer suggestions for exercises, etc., that can be implemented in the classroom for the purpose of developing steps 1 and 2 above. Invite the participants to volunteer activities that they have used in the past to develop vocabulary. (See also the Journal of Reading Vol. 24, No. 1, October, 1980 for additional suggestions.)

V. Conclusion

*Presentation. Review the points made in the session.

*Activity D.7. Encourage the participants to work in small (content area) groups to devise exercises that will require application of the word identification skills in Section III and that will also fulfill the purposes outlined in steps 1 and 2 in Section IV.

Session E: Extracting Ideas From the Printed Page[1]

For reading comprehension to take place, the reader, with all reading skills developed, must interact with the text by applying those reading skills. To simply extract a fact from a page of text the reader must know the proper skill to apply. The purposes of this session will be:

1. To acquaint the participants with the skills that students must apply.

2. To assist the teachers as they determine the skills most important for learning in their content-area.

Outline for Session E

I. Literal comprehension

*Presentation

II. Skills needed for literal comprehension

*Presentation

*Activity E.1 - Individual, Guided Practice: Skills in Text

III. Literal comprehension skills and content-area learning

*Presentation

*Activity E.2 - Individual, Application: Skills in Text

*Activity E.3 - Small group, Discussion: Skills in Text

*Activity E.4 - Large group, Discussion: Skill-use Patterns

Materials Needed for Session E

Not all materials have been developed for this session. The participants, however, should bring with them a text from which they will soon be making a reading assignment.

[1]This is intended as a companion session to precede Session F, "Making Sense of Ideas Extracted From Print." The two sessions should be conducted with as little time as possible allowed to lapse between them.

Session E: Extracting Ideas From the Printed Page

I. Literal comprehension

*Presentation:

1. Define literal comprehension. This can be done only by contrasting it with inferential comprehension.

2. Remind participants that students learn the skills of literal comprehension during basal reader group instruction at the elementary level. This means the vehicle used for such learning (i.e., the basal reader) is almost completely narrative text. Even the content-area texts used at the earlier grade levels resemble basal readers. Remind the participants to think back to Session A, Activity 4 where they examined the readily apparent changes that take place in content-area texts from early elementary grades through senior high. Review the differences they found in the texts.

3. Summarize what has been presented thus far by drawing on the ideas of increasing complexity of text as defined in Session C.

4. Specifically describe the apparent inability of students to extract ideas from text as owing to several factors: (a) change from narrative to expository text, (b) increasing syntactic complexity of text, (c) greater abstraction of ideas to be learned from text. Identify the apparent problem as a developmental one that must be dealt with at all grade levels.

II. Skills needed for literal comprehension

*Presentation: All of the skills taught at the elementary level were introduced in Session A: Building a Comprehensive K-12 Reading Program. In that session participants were only told what these skills were. In this session the skills should be presented in greater detail and the participants should have an opportunity to interact with them to reach some understanding of how these skills affect learning in their content-area.

The skills here should be presented around five points:

1. What are the major ideas (main idea, both paragraph and passage)?

2. What support is given for the major ideas (detail)?

3. In what order do the ideas occur (sequence)?

4. What is the relationship of these ideas (relationships and conclusions)?

5. How are the ideas connected (transitional words, phrases and clauses)?

Each point should be discussed using several examples and as little reading jargon as possible. It would be helpful if the examples could be drawn from as many content-areas as possible.

*Activity E.1: This activity should be a simulation to allow all the individuals to have a common experience centering on the skills that were discussed above. The text chosen should be on a topic of interest to adults and should be written using expository prose. The text should be approximately 3 pages long and should be written at an adult reading level. The guidesheet to accompany the text should direct the participants to use the skills outlined above to answer specific literal comprehension questions (e.g., what is the major idea of paragraph x?, What event occurred first?, What in the text told you that?)

*Presentation Summary: Explain that most students are familiar with these skills but that it simply doesn't occur to some students to apply the skills with text outside of a formal reading class. Reminding students to do this should be necessary with decreasing frequency as the school year progresses. For some, however, the need to hear it repeated may continue.

III. Literal comprehension skills and content-area learning

*Presentation: Most text the participants assign their students to read will be expository in nature. Invite the participants to review the handout they completed in Activity 4, Session A. List on the chalkboard the five clusters of comprehension skills outlined in Section II of this session (these could also be listed on a handout).

*Activity E.2: Ask the participants to select from their textbook an assignment they intend to make sometime in the next few weeks. Tell them first to make a list of the important ideas they want the students to learn from that text. Next, for each idea they want the students to learn, have them look closely at the text to see what literal comprehension skills the students must apply to extract that meaning from the text. (A worksheet could be designed for this activity.) Ask them to consider if they draw consistently on the same skill or if they require the application of several skills.

*Activity E.3. Small group (content-area) discussion. Have the participants meet in content-area groups to discuss the types of skills they each identified for their text assignment. Ask them to see if there is more similarity or difference between the classes. Can they see a pattern of skill use for their subject matter?

*Activity E.4. Large group discussion. Ask one representative from each content-area group to present the findings of that group. Are the skill-use patterns different or similar between content areas? Are there skills which are apparently not being utilized?

*NOTE: This is intended as a companion session to precede Session F, "Making Sense of Ideas Extracted From Print." Concluding activities for both Session E and F are included at the end of Session F.

Session F: Making Sense of Ideas Extracted From Print[1]

Once a fact has been extracted from the text, the reader must make some decision about that fact. Some skills taught in reading classes at the elementary level should help students to make these decisions. The purposes of this session will be:

1. To familiarize teachers with the more judgmental reading skills the students have learned.

2. To assist teachers as they devise materials to help their students apply comprehension skills to extract and make sense of ideas from text.

Outline for Session F

I. Reading/Thinking Skills: An Introduction

*Presentation

*Activity F.1 - Individual, Guided Practice: Comprehension

II. Understanding the Problem

*Presentation

*Activity F.2 - Small group, Discussion: Judgment Skills

III. Applying comprehension skills

*Presentation

*Demonstration

*Activity F.3 - Individual, Application: Comprehension Skills

IV. Conclusion

Materials Needed for Session F

Not all materials have been developed for this session.

[1]Note: This is intended as a companion session to follow Session E, "Extracting Ideas From the Printed Page." The two sessions should be conducted with as little time as possible allowed to lapse between them.

Session F: Making Sense of Ideas Extracted from Print

I. Reading/Thinking Skills: An Introduction

*Presentation:

- Many students at postelementary levels have little difficulty decoding most words. Many of these students can extract single ideas from the text. Their "reading" problem (or is it a "thinking" problem) results from the fact that they don't know how to put the single pieces of information together to make sense.

*Activity F.1: Give the participants a one page passage. The passage should be easy to decode and the participants should have no trouble pulling single ideas from it by applying the comprehension skills identified in Session E. The passage should be one that the participants have difficulty understanding because they are unable to make judgments concerning the importance or relationship of the single ideas. Ask the participants to read the passage and then to complete the usual end-of-chapter questions. After the participants have been given time to work, ask them if anyone can identify what is causing the problem.

II. Understanding the Problem

*Presentation: To make sense of ideas extracted from print (for examples, relate to the passage used in Activity F.1) the students need to be able to:

1. Tap their background knowledge about a specific topic. They need to be reminded to do this.

2. Understand the relative importance of ideas.

3. Monitor their own understanding about what they are reading.

4. Apply reading/thinking skills that can help to make a judgment. Some of these skills include:

   - considering author's purpose, i.e., attempting to understand the position of the author and the reason the author wrote the text

- questioning relevance of information to a topic

- distinguishing fact from opinion

- recognizing persuasive techniques

*Activity F.2: Explain the skills above in as much detail as necessary, with examples so the participants understand what each means. Ask the participants to discuss in small (content-area) groups which of the skills are important for learning their subject matter. After they have had some time to discuss, call them back to a large group and ask one representative from each group to summarize their group's discussion. Is there similarity across the content areas?

III. Applying comprehension skills

*Presentation: Review all the comprehension skills the participants have been working with, both the literal comprehension skills from Session E and the judgmental skills from this session. Explain that it isn't enough simply to identify the comprehension skills the students must apply to extract and make sense of the ideas from text. To make the information be of any value, the teacher must do something with it.

*Demonstration: Share with the teachers a study guide based on the text passage used in Activity E.1. Distribute to each participant a copy of a handout (temporarily identified here as Handout F.1) that provides guidelines for developing a study guide sheet for their students.

*Activity F.3: Direct the teachers to devise a study guide sheet for the passage they worked with in Activity E.2. Allow time for them to complete this activity.

IV. Conclusion

Summarize the intentions of both of these sessions - to alert teachers to appropriate comprehension skills and to ideas for dealing with them. Ask the teachers to share the thoughts they had as they were developing their study guides. Are these thoughts similar across content areas?

Session G: Utilizing Textual Aids

Aids for reading comprehension may take several forms. They may be verbal, such as when a teacher points out in a class discussion important facts and ideas in a written paragraph; they may be graphic, such as maps, graphs, tables, charts, schedules, timelines, diagrams, pictures, or boldface print; or, they may be written and occur, for example, as marginal notes in a text or as a mnemonic device which aids students' memory of factual information.

The purposes of this session will be:

1. To guide teachers as they determine the textual aids most useful in their content-area.

2. To familiarze teachers with the skills students need to interpret those textual aids.

*PROCEDURAL NOTE: TRAN. G.1 summarizes the purposes.

Outline for Session G

I. The importance of textual aids

*Presentation

II. Types of textual aids

*Presentation

III. Working with textual aids

*Presentation

IV. Identifying textual aids in your class

*Individual, Application: Textual Aids

*Small group, Discussion/Application: Textual Aid Instruction

*Large group, Discussion: Textual Aid Patterns

V. Conclusion

Materials Needed for Session G

- 1 copy each of Transparencies 1 through 14
- Overhead projector and screen
- 1 copy for each participant of Handout C.4 if it has not been completed in a previous session

- 1 copy of Handout G.1 for each participant
- Participants will need to bring:
    - textbook usually used in class
    - completed Handout B.4 from an earlier session

Session G: Utilizing Textual Aids

I. The importance of textual aids

Before we begin to look at the types of aids that we find in text, perhaps it would be good to consider why it is necessary to do so. We all know that the words of a text sometimes may be accompanied by a picture or an illustration of some type. Many times we unconsciously are influenced by that addition -- such as when that picture makes an impression on us and influences how we approach that text. Publishers of best selling paperbacks take full advantage of this when they choose their cover illustrations. Think back to the last time you were browsing in a paperback book section. What prompted you to pick up a book? The cover design? The color of that design? The illustration? The overall impact of that cover? All of these things were carefully calculated by the publisher to attract your attention for the purpose of convincing you to buy the book.

*PROCEDURAL NOTE: See TRAN. G.2

Authors -- as well as their publishers -- are fully aware that the old adage "a picture is worth a thousand words" is worth keeping in mind. The author uses some types of textual aids to help to create for the reader an overall impression of the topic, but the purpose is usually more far-reaching. The author may use the illustration to attract your attention or to emphasize an important point in an effort to help you learn or understand the information. These additions to the text are not included at whim, however. The additions to text are expensive so that every textual aid must be fully justified if it is to survive to the final printing. Each textual aid must present valuable information for the reader.

*PROCEDURAL NOTE: See TRAN. G.3

The problem is that as readers many times we tend to give these aids only cursory attention. Perhaps our emphasis on getting meaning from the words has caused us to look past these textual aids, so that the author's valuable message is lost. Because we dismiss textual aids quickly we never fully develop the necessary abilities to extract as much information from them as the author intended. That the importance of graphic information presented in conjunction with written text is frequently overlooked by students and teachers was reported in a study by Askov, et al.,[1] (1980). Askov, et. al., found that students (ranging from sixth grade to college graduate level) were not able to demonstrate mastery of all of the identified basic map reading and graph reading skills, and the same was true for

[1]Askov, E. N., Kamm, K., Klumb, R., & Barnette, J. J. Study skills mastery: Comparisons between teachers and students on selected skills, in 1980 NRC Yearbook (in press).

teachers as well! What's the problem?! Askov, et. al., drew several conclusions:

1. We frequently assume individuals know how to read graphic displays; we shouldn't assume that.

2. The ability of students to somehow "pick-up" -- without formal instruction -- the skills to read these displays is questionable.

3. Attention to the skills is needed in the elementary classroom if students are to attain them, and in the secondary classrooms, if students are to reinforce them.

4. Textbooks need to better reflect the importance of the graphic skills, through offering more assistance in learning to read and use graphic displays.

*PROCEDURAL NOTE: See TRAN. G.4

Now, we can't do much about the last point -- except to attempt to convince publisher's to make some changes -- but we certainly can about the first three. We can:

- stop assuming that students can interpret graphic displays

- examine these displays to determine the skills students need to use to interpret them

- incorporate attention to these skills as the need arises in our classrooms

II. Types of textual aids

*PROCEDURAL NOTE: See TRAN. G.5

For the purposes of this session, let's consider a textual aid to be anything which an author or publisher prints that accompanies the words. This means that in this session we must consider several different types of textual aids, including:

- word highlighting

- photographs

- cartoons

- diagrams

- timelines

- graphs

- tables

- maps

Let's look at each of these aids to see 1) what they include and 2) what skills might be needed to interpret them.

*PROCEDURAL NOTE: Although not provided with the transparency suggestions, you might like to share examples of each of the textual aids discussed below. Check books in your store room for possibilities.

*PROCEDURAL NOTE: See TRAN. G.6

1. Word-highlighting. New words and concepts, or extremely important ideas may be given special attention by the author/publisher in order to attract the readers' eye. This special attention may take the form of boldface print, underlining, italics, or contrasting ink color. Special points may be set off by bullets or asterisks.

   Students need to be alerted to the idea that such aids are being offered in the text.

   The aids within each content text should be pointed out to students, because each text may vary according to which aids are used as well as to how they are used. Students should be encouraged to form a habit of attending to these aids when they read their texts.

*PROCEDURAL NOTE: See TRAN. G.7

2. Photographs and line drawings. Readers often assume that pictures accompanying written text are included only for aesthetic purposes. While some pictures are included mainly for this reason, others are helpful in getting meaning from the text. For example, a picture may be carefully drawn to illustrate a main point the author wishes to make. A carefully chosen photograph can serve the same purpose. Readers should be encouraged to examine these illustrations carefully and to try to understand why the author chose them. Such an understanding may help to make the text more meaningful. A careful examination of them might also secure them -- as well as the information they illustrate -- in memory and assure later retrieval.

3. Cartoons. Although they are a category of line-drawings, cartoons merit a special word. They may portray a main idea of an entire chapter or they can depict the important facts from a selection by providing a humorous, easily remembered illustration pertaining to them. They are special, however, because they assume not only that the reader is familiar with a situation but also able to accept a new perspective on it. Cartoon reading, by its apparent similarity to what is found in the Sunday funny papers, appears simple. Accurate reading of a cartoon requires a relatively mature eye, well-trained to understand pictorial symbolism and visual sarcasm. Students need guidance to develop these abilities.

4. Diagrams, timelines. Used primarily to demonstrate actions or illustrate relationships, these types of textual aids range widely in degree of complexity as well as in style and format. Usually each example must be studied feature by feature, that is, by title, labels, and content to understand it completely. Many newer texts use color to highlight the most important aspects of the diagram or timeline. Here, as with cartoons, understanding the symbolism used may be the key to understanding what the author intended.

*PROCEDURAL NOTE: See TRAN. G.9

5. Graphs and tables. Graphs and tables summarize the words of the text and sometimes offer additional information. They also, however, present concepts in a very concise manner. This characteristic often makes these materials quite difficult to interpret, and creates a need for them to be taught in order to be understood.

*PROCEDURAL NOTE: See TRAN. G.10

The reading project staff at the Wisconsin Research and Development Center for Individualized Schooling found that specific skills are important for learning to interpret graphs and tables (Sals, 1975)[1]. The skills identified include comparing relative amounts, extracting directly, interpolating, determining differences (by adding, subtracting, multiplying and dividing), summarizing, determining the purpose, and making projections. These skills, once learned, can be adapted and used to interpret most types of graphs and tables (e.g., a picture, bar, line, or circle graph, or single or multicolumn table). Thus, when teaching students how to read graphs and tables, these specific skills (not the type of graphs as some investigators have previously thought) should be the focus of instruction.

[1]Sals, D. K. Revisions for the commercial edition of the study skills element of the Wisconsin Design for Reading Skill Development. Working Paper 128. Madison: Wisconsin Research and Development Center for Cognitive Learning, May 1975.

*PROCEDURAL NOTE: See TRAN. G.11 & G.12

6. Maps. Maps illustrate spatial relationships and they also present concepts very concisely. Because of this, as was true with graphs and tables, a number of skills are required to read them. The skills can be grouped into three categories: representation, orientation, and measurement.

The representation skills involve interpreting the symbols used on a map. Each symbol is explained in the map legend or key. For example, a map might have (a) several point symbols, such as , , , depicting bridges, oil wells and types of highways, respectively; (b) several line symbols, such as lines of different widths showing amounts of traffic over various shipping routes; or (c) area symbols, such as different line and dot patterns ( ) or colors to show, say, the amount of rainfall or various levels of terrain. Maps cannot be fully understood unless the reader refers to the legend and uses it.

Orientation skills involve determining directions and locations of places on maps. To determine directions on a map, students must know that directions are determined by the earth's poles; that globes are models of the earth, and that maps are representations of globes. To figure out directions on a map, students should look for the "direction indicator," or compass rose, which points to where the North Pole is located. (The other cardinal [south, east, and west] and intermediate directions [e.g., northeast, northwest, southeast, southwest] may or may not be labeled.)

As students gain experience with maps and become familiar with the meridians and parallels (lines of longitude and latitude) they should learn that all meridians pass through the North and South Poles and that all parallels run east and west. These lines, then, are the true direction indicators, and are frequently included on more complex maps, instead of, say, a compass rose.

To determine locations of places on maps, students have to know how to use a grid system, where the intersection of either a row (designated by, say, letters) and a column (designated by, say, numbers) or of a line of latitude and a line of longitude give the specific location of a point. Using lines of latitude and longitude, in particular, can be confusing and a difficult skill to learn. It should, therefore, be presented in carefully thought-out lessons and be well integrated into the content study.

Measurement skills involve the use of scale. Students must know how to use the scale bar or verbal referent (/_____/, 0 miles 200 1 inch = 200 miles) on a map to determine actual distances. Also, they should understand that maps are drawn to different scales. For example, a map of New York City may show great detail if it is drawn to a large scale (e.g., 1 inch = 2 miles) and very little detail if it is drawn to a small scale (e.g., 1 inch = 20 miles).

So, in all we have word-highlighting, photographs, line drawings, cartoons, diagrams, timelines, graphs, tables and maps. What do we do with all of them?

III. Working with textual aids

What we need to keep in mind is that incorporating a textual aid costs publishers a great deal of money. Publishers are not going to agree to print even one if the author cannot present a complete justification for it. If the author can justify it, we can assume that there is valuable information to be extracted from it. We can insist that the students pay attention to them by consistently pointing them out. More specifically we can try:

For maps: If a map is included in the reading that is assigned, examine it carefully. What skills does a student need to understand the message of that map? Do the students in the class have the ability to apply those skills? Perhaps it might be necessary only to review with the students the necessary skills. It may be necessary to spend some time initially with the skills until the students know and can use them on their own. If students cannot use these skills, they are likely to have difficulty reading and understanding the the maps in their texts.

For graphs and tables: To find out whether students are familiar with graph and table skills, select a graphic display in a content text reading assignment and review it to determine which skills are necessary to interpret it correctly. Then review the graph with the students. Point out the features, for example, the title and the labels for the coordinate and axis. Pose questions for the students that can be both answered by the information contained in the graph and that are relevant to the topic of the accompanying written text to demonstrate the importance of the display. Do this review both before and after the students have read the assignment.

For cartoons, diagrams and timelines: Center a portion of the class discussion on one of these textual aids. Be certain that the students understand the symbolism involved.

For photographs and line drawings: Suggest to the students that they might try to figure out why that particular illustration was used. Trying to determine what helped the author to make the decision on what to use can prompt the student to actively think about the message the author is presenting in the written text. This can lead to greater understanding of that text.

For word-highlighting: When you first begin to use a text, explain to the students in detail the method of highlighting that the publisher has adopted. Explain also how the students can use that system to advantage as they study the text on their own. Periodically remind the students that the word-highlighting system is there as an aid for them.

*PROCEDURAL NOTE: See TRAN. G.13

In general, the students should be encouraged as they read to observe the textual aids that are included in their text. The student should ask each time:

1. What is the author trying to say with this textual aid?

2. Why did the author choose this particular textual aid to say that?

*PROCEDURAL NOTE: See TRAN. G.14

As a general guideline, when you assign something to be read, review it to see what textual aids are included. Check to see what a student needs to be able to extract the necessary information. Then when you give the assignment, point out that the aid is there, review any special skills the student may need to apply to interpret it and finally, point out the relevance of that aid to the written text.

This may sound like many steps, but remember you aren't going to find that each textual aid will need such treatment. Determine which are the most important for the students to learn and understand the information in your class.

IV. Identifying textual aids in your class

(PROCEDURAL NOTE: In Session B, "Making Assignments," part of Handout B.4 asks the teachers to identify if various textual aids are present or not present. For those that are present, the teacher is asked to determine if they are of low or high importance in that text. If you have completed Session B you might remind the participants to refer to that handout. If you have not completed Session B you might ask the participants to complete Handout B.4 at this time.)

Handout B.4 asked you to make an overall judgment of whether or not specific textual aids were present. It is time now to take a closer look at some of these textual aids.

*PROCEDURAL NOTE: Distribute Handout G.1 to each participant. Allow time to complete it.

*SMALL GROUP DISCUSSION: Ask the participants to get into content-area work groups so that they may share the information they have compiled on Handout G.1. Ask them to try to identify:

1. Patterns of the use of certain textual aids in their content-area.

2. Unique ways of sharing the information about specific textual aids with their students.

*LARGE GROUP DISCUSSION: Ask one participant from each content-area to share with all other participants the results of both discussion points listed for the small groups. Attempt to determine with the participants if there are patterns across content areas.

V. Conclusion

Summarize for the participants that textual aids are included with text at great expense to the publisher. Any aid that is included must have a valuable message. Encourage the participants to focus on these aids when giving assignments, in class discussions and in individual interactions with students. Point out that an emphasis on such aids will help to develop overall student abilities and will, therefore, help to transform the dependent student to an independent learner.

Transparencies for Session G

TRAN. G.1

Purposes of Session G:

- Determine most useful textual aids
- Understand skills needed to interpret textual aids

TRAN. G.2

Authors include textual aids to:

- Create an overall impression
- Attract attention
- Illustrate an important point
- Provide valuable information for the reader

TRAN. G.3

Readers often

- outright dismiss

or

- give cursory attention to textual aids

TRAN. G.4

As educators we must:

- Not assume students can read textual aids
- Examine aids to determine needed reading skills
- Direct attention in class to aids and skills

TRAN. G.5

Types of textual aids:

- Word highlighting
- Photographs
- Cartoons
- Diagrams
- Timelines
- Maps
- Graphs
- Tables

TRAN. G.6

Why Word Highlighting?

- Point out new words and concepts
- Identify most important points

TRAN. G.7

Why Photographs, Linedrawings?

- Set a mood
- Make a special point

Why Cartoons?

- The familiar from a new perspective → symbolism

TRAN. G.8

Why Diagrams, Timelines?

- Illustrate relationships
- Demonstrate actions

TRAN. G.9

Why Graphs and Tables?

- Present concepts concisely
- Summarize words in text
- Offer additional information

TRAN. G.10

Reading Graphs and Tables: Special Skills

- Compare relative amounts
- Extract information or interpolate
- Determine differences
- Summarize or project

TRAN. G.11

Why Maps?

- Illustrate spatial relationships
- Present concepts concisely

TRAN. G.12

Reading Maps: Special skills

- Representation (symbols)
- Orientation (directions + locations)
- Measurement (scale)

TRAN. G.13

Remind students to ask as they read:

1. What is this textual aid telling me?
2. Why did the author choose to use this type of textual aid?

TRAN. G.14

Utilizing textual aids:

1. Identify the textual aids in the assignment
2. Check for necessary skills
3. Point out that aids are present
4. Review special skills needed
5. Specify relevance to written text

HANDOUT G.1: Identifying Textual Aids

1. Of the graphic aids included in your text, list 2 types that you considered to be of high importance when you responded to Handout C.4.

   1. _____

   2. _____

2. Now that you have thought more about textual aids, have you in any way changed your mind? ____Yes ____No
   If no, go on to 3. If yes, in what way have you changed your mind? List those that you now consider of greater importance.

3. Choose one reading assignment that you might be likely to make from the text, then.....

   1. List below, by page, all the textual aids that are present in it.

   2. Identify with a star the three to five that are most important.

   3. Decide what special skills are needed to interpret each of them.

   4. Determine how you will relate to your class the importance, relevance, etc., of these textual aids.

   5. Be prepared to share your ideas with others in your content area.

Session H: Study Tips for Making Every Minute Count

Before effective study can begin students must understand the difference between "reading" and "studying." In this session teacher participants will become involved with understanding (1) why students don't distinguish between the terms, (2) what factors are involved in studying, and (3) the possibilities of a flexible reading rate.

The purposes of this session will be:

1. To investigate "study" as opposed to"reading".
2. To develop ideas to prompt students to "study".

Outline for Session H

I. Introductory Activity H.1 - Individual, Guided Practice: Read vs. Study

II. Developing skills for study

*Presentation

. Meaning of "study"

. Reasons why students don't differentiate between "read" and "study"

III. Factors involved in studying

*Presentation

. Understanding the relative importance of the information to be learned

. Knowing that you need to ask questions

. Knowing how to begin the attack

. Getting actively involved with the material

IV. Beginning the attack: Adapting reading rate to purpose and difficulty

*Presentation

. Speed Reading

. Skimming

. Scanning

*Activity H.2 - Individual, Guided Practice: Skimming and Scanning

V. Continuing the Attack: Getting actively involved with the materials

*Presentation

. review of ways to get kids actively involved with materials

. features common to study systems

*Activity H.3 - Small group, Guided Practice: Study Systems

VI. Summary and Conclusion

*Presentation

. review of major points in presentation

*Large Group, Discussion/Application: Study for Students

Materials Needed for Session H

- 1 copy each of Transparencies 1 through 14
- Overhead projector and screen
- 1 copy for each participant of Handouts H.1, H.2, H.3, H.4, H.5, H.6, H.7

Session H: Study Tips for Making Every Minute Count

I. Introductory Activity

*PROCEDURAL NOTE: Conduct Activity H.1

II. Developing Skills for Study

Think about how you approached the two passages you just worked with. Did you do anything different with one? If so, which one? What did you do differently? Why do you suppose you did that?

As individuals involved in the education profession we share at least one common experience: we've all managed to survive at least four years of schooling beyond the high school level. At some point we all have had to fashion some definition--consciously or subconsciously--of the term "study." Think for a minute about what these two terms mean to you:

read and study

What kind of a definition of the terms can we arrive at as a group?

*PROCEDURAL NOTE: Allow time for the participants to think and then write on the chalkboard definitions for the two terms as they evolve.

The Unabridged Edition of the Random House Dictionary of the English Language defines each of the terms as follows (each gives the first meaning followed by others):

read: to peruse and apprehend the meaning of (something written, printed, etc.): to read a book.

study: application of the mind to the acquisition of knowledge, as by reading, investigation, or reflection: long hours of study.

In essence we can say that study subsumes reading. Study implies a very serious approach to the reading of material where the expectation is that you will learn the information that is printed there.

*PROCEDURAL NOTE: See TRAN. H.2

You and I over time have learned what study really involves. Consciously we can distinguish between the two terms. Kids don't distinguish between the two terms. Kids don't distinguish between a direction to "study" and a direction to "read." Why? One reason could be that prior to their high school years students are never taught in any organized fashion to distinguish between the two terms. Why not? Well, for several reasons including these:

1. In the early elementary grades most of the concern is for teaching the basic skills of decoding to the point that these skills become automatic.

2. At the elementary grades at times there is a tendency to be concerned with the subject matter of what is read, not with developing the process of reading.

3. Students have not matured enough before they leave elementary school that they are able to understand and appreciate the differences between "studying" and "reading."

4. The materials the student works with at the elementary level do not lend themselves to serious study.

5. Students are not asked to read great amounts of material at the elementary level and the questions they are asked about the material they do read tend to remain pretty much the same: e.g., Who was (specific character named)? What happened after (specific incident)? How did you feel about that?

6. Most teachers at the elementary level by necessity are content area generalists rather than specialists. Because they are familiar with all subjects rather than with just one they may not be familiar with the study-type tips a content area specialist could contribute to a student.

So, students are not really familiar with what "studying" means when they enter the postelementary grades--When they get there, what should they learn? What is the best way for them to learn it?

III. Factors Involved in Studying

*PROCEDURAL NOTE: See TRAN. H.3

Let's look first at the factors that contribute to effective studying. There are four basic factors--we'll look at them quickly as a whole and then we'll look at each one in more detail. The four factors are:

1. understanding the relative importance of the information to be learned,

2. knowing that you need to ask questions,

3. knowing how to begin the attack, and

4. getting actively involved with the material.

Now let's look at each factor separately for two reasons--to get a common understanding of what that factor means and then also to get some idea of the best way to get the students to understand the importance of that factor.

*PROCEDURAL NOTE: See TRAN. H.4

*PROCEDURAL NOTE: Context and purpose are introduced and discussed in depth in Session B: Making Assignments.

(1) Understanding the relative importance of the information to be learned is another way of saying that one has the information in the proper perspective. This perspective should be part of the assignment that the student is given. It is part of the context for the subject matter assignment and part of the purpose as well. Perspective is something that must be shared with the student. Few students have read widely enough in any of the subject areas to be able to provide the necessary perspective for any subset of information in that content area.

*PROCEDURAL NOTE: Examples drawn from specific classes taught by participants should/could be given here.

*PROCEDURAL NOTE: See TRAN. H.5

(2) Knowing that you need to ask questions is the second factor necessary for effective studying. Students must develop the habit of questioning what they know about a particular subject. Some of the kinds of questions to ask will be suggested by the context and purpose given in the assignment. Other equally important questions will not be prompted, but the student must learn to independently ask them. This may make more sense if we look at the types of questions the student needs to ask.

*PROCEDURAL NOTE: Distribute Handout H.2 and read through it with them.

These questions include the following:

--What do I already know about this topic?

--How much do I already know?

--Why should I read this?

--How should I read this?

--How much time should I spend with this?

--What kind of time should I spend with this?

If the student learns to question himself/herself in this fashion before beginning a reading assignment, some progress will be made toward creating a mind set which will enable some active learning to take place.

We need to introduce a note of caution here. The purpose of self-questioning at this point is not to in fact precisely answer the questions asked but instead to prepare the mind to be more receptive to the information it is about to encounter. For that reason students should never be asked to write lengthy answers to each of these 6 questions, but they should be prepared to give a brief verbal answer to the last four questions--those for which they should have received some cues in the purpose portion of the reading assignment when it was made.

How do we get kids to ask themselves these questions? (1) By sharing with them that they should be asking themselves these kinds of things. (2) By reminding them to ask themselves these things. (3) Perhaps by creating a united front--if all teachers consider these things to be important, maybe they really are! All you can do is create an awareness that asking oneself questions is important. The kids have to take it from there!

*PROCEDURAL NOTE: See TRAN. H.6

(3) Knowing how to begin the attack is the third factor necessary for effective studying. Knowing how to attack a reading assignment means knowing how first to read that assignment. There are several different ways one can read--no one should read all things the same way. This is a highly inefficient way to use one's reading skills!

PROCEDURAL NOTE: See TRAN. H.7

The way one reads a particular piece should depend upon (1) the purpose for reading and (2) the difficulty level of that reading. Some of the ways one can attack a particular piece include, for example, skimming and scanning. We'll stop at this point with this factor--we're going to return to it in a minute.

(4) Getting actively involved with the material is the fourth factor necessary for effective studying. A great deal of research has been undertaken for the purpose of determining the best way to help kids to learn material. Proponents of one system can cite research to support their position while opponents of the same system can cite research to refute that position. And, vice versa. If one reads as much as possible of the literature to this point in time one common point emerges: What helps kids learn is to get them actively involved in working in some manner with the material that is to be learned. This fits very nicely with current thinking about how information gets processed in the brain.

*PROCEDURAL NOTE: See TRAN. H.8

Information processing (what the current theory is called) suggests that our brain operates simultaneously on several different levels. We are constantly taking in information via our senses, but much of this never gets beyond the reception stage of the Sensory Register (SR). Some, however, for whatever reason is operated on via some process and gets put into short-term memory (STM for short). STM has a very small capacity, something like 7 plus

or minus 2 pieces. What is remembered for a long time is stored in long-term memory (LTM for short). LTM's capacity is infinite.

Now, there are many, many factors here that need greater study and we have few definitive answers about any of the factors, but the theory suggests that something special has to happen to get information past the SR and the STM to the LTM. Those special factors may be many and varied (we can't rank order them yet), but they all involve one thing: they all involve working actively with the ideas that are to be put into LTM.

*PROCEDURAL NOTE: See TRAN. H.9

Another way to say it is that, to be remembered, information must be actively processed. The more actively information is processed, the more deeply it is processed and the better chance there is that it will be remembered in the future . . . which is really what we're after in teaching kids! We want them to remember in the future.

*PROCEDURAL NOTE: See TRAN. H.10

So, what are some of the ways we can get kids actively involved with the information? There are four basic ways kids can be encouraged to interact with material. They can be asked to:

1. Respond to questions

2. Compose questions

3. Translate information

4. Chunk information

Each of these basic ways has limitless variations--as we'll be talking about later in this session as well as in the next. But, for now, some examples:

- Kids can be asked to respond to questions posed before they read, while they are reading or after they've finished reading a specific piece of text.

- Kids can be asked to compose questions before, during or after reading.

- Kids can be asked to read a particular piece of text and then write it (translate it) in another way: by taking notes, by outlining, by drawing a picture, etc.

- Finally, kids can be asked to chunk information (i.e., to find order for the information) by categorizing and by a process we call "mapping."

In the rest of this session (and also in Session J) we'll be looking at some techniques that have been developed for getting kids to become actively involved with the material as they study.

*PROCEDURAL NOTE: See TRAN. H.11

To summarize, there are four factors that are involved in studying...

1. Understanding the relative importance of the information to be learned--i.e., having some perspective

2. Knowing what questions to ask--i.e., self-questioning

3. Knowing how to begin the attack--i.e., knowing the way to begin reading

4. Getting actively involved in some way with the information to be learned

If students are taught what these factors are and why they are important, they will be well on their way to understanding what "studying" really means.

So, who should teach the students what the factors are? Is it possible for one teacher in one subject matter area to get the information across? That is a decision you as a staff must make. The biggest success stories, however, are reported by the school systems (e.g., Birmingham, Michigan) where all teachers in all content areas began simultaneously to talk about the process of reading and studying! The students, hearing it from all directions at once, began to think perhaps there was some merit in it--and, that it really was a process they needed to be concerned with.

So, in anticipation that we as a staff can make the decision to give it a simultaneous introduction--we'll move on to some background information.

IV. Beginning the Attack: Adapting Reading Rate to Purpose and Difficulty

Before we can investigate ways to get students actively involved with material we need to talk for a bit about different ways of reading material.

Many people think that reading is something that is done at a very constant pace. To these people every word that is printed must be read carefully. The solution they see to the problem of more and more print to read is to learn speed reading. This solution they feel will help them to get through printed material faster--but still they believe each word will

be processed as always--completely and methodically. Speed reading, they seem to think, is that somewhat mystical process that will enable one to do more, faster!

*PROCEDURAL NOTE: See TRAN. H.12

Speed reading is one means of adapting rate--and it is an acceptable means provided it doesn't conflict with the purpose for reading. But, speed reading is not a study technique (the major topic for today) and speed reading is not a solution to the problems we face in getting kids to study more effectively, so we aren't going to pursue it any further today.

What we'll be talking about is adapting the rate of reading to suit the purpose for reading and the difficulty level of the material. We are going to look at two different ways of attacking reading material:

. Skimming

. Scanning

These two ways of attacking reading material can be incorporated very effectively into one's study techniques. The important thing to remember is that each assumes the reader has a specific purpose in mind.

*PROCEDURAL NOTE: See TRAN. H.13

Skimming is done to get an overall idea of the topic. The purpose for skimming is to be able to make a general statement about the material read. The reader should come away with a general impression of the material, more a "feel" for what the author said rather than a definite idea of what specifically was written. The reader might also be able to give some indication of the author's intent.

When skimming, the reader is looking for something but what (other than a general impression) is not known precisely before the reader begins. A reader might skim difficult materials to get a general impression before giving them a careful reading. Or, a reader might skim after an intensive reading to refresh his/her memory about the contents. In real life attacking a newspaper article by skimming could prove very useful. The reader will know where to return later if more specific information is needed.

*PROCEDURAL NOTE: See TRAN. H.14

Scanning is done to very rapidly locate specific information. The reader looks only for specific information centering on a cue word and comprehends nothing else about the text. If the reader comes away with other information, scanning is not being done properly! In real life using a telephone directory to find a specific person's number is a practical use for scanning.

To get a better understanding of what skimming and scanning are, let's try a few activities where you will develop your skimming and scanning abilities.

*PROCEDURAL NOTE: Conduct Activity H. 2

V. Continuing the Attack: Getting actively involved with the material

We had a slight excursion into skimming and scanning and now that you have some feel for what can be done with a flexible reading rate we're ready to take a look at some techniques that have been suggested for getting students actively involved with the material they are to learn.

*PROCEDURAL NOTE: Refer again to TRAN. H.10

Let's first review the four basic ways that kids can be encouraged to interact with the material. These four ways include:

1. Responding to questions
2. Composing questions
3. Translating information
4. Chunking information

During the last twenty-odd years several study systems have been devised. You may have heard about one or more of them: SQ3R, PQ4R, PQRST. The authors of each system feel they have devised a foolproof system to get students to study effectively. Have they? You keep in mind what four basic ways there are to get students actively involved with material. I'll describe for you the basic principles these study systems share. Then together we can determine if these study systems have a chance to be effective.

*PROCEDURAL NOTE: Write the key words for each study system on the chalkboard as easy cues for you as you present the ideas of the study systems (see below).

Let's compare 3 of the systems:

. Survey Question Read Recite Review (SQ3R)

. Preview Question Read Reflect Recite Review (PQ4R)

. Preview Question Read State Test (PQR.S.T.)

The first term in each system, whether it is survey or preview, asks the reader to look ahead at the material in a special way. The reader is urged first to look at the title and think about its implications. Follow-

ing this the reader is to skim the introductory paragraph, and then read each of the bold-faced headings. This survey or preview shows the reader what is ahead in the text. The reader has some idea of the direction the text will be going.

The second term is the same with each system; the reader is directed to question. This questioning is different from the type we discussed earlier. Whereas the earlier type of questions were aimed at creating a mindset for studying, this type of question is to be very specific to the text to be read. The reader is encouraged to again look at each bold-faced heading and after reading it to turn it into a question that is to be contemplated before the actual reading takes place.

The third term also is the same with each system; the reader is directed to read. The student is urged here to read with care and to aim for complete comprehension. This requires that constant attention be directed to the material. The reader is urged to make sure all terms used are understood.

At this point the study systems begin to diverge. PQ4R instructs the reader to stop to reflect on what has been read before reciting and then reviewing. SQ3R and PQRST skip the reflect step (or is that step implicit?) and direct the reader to recite or state the information that has been read. With SQ3R and PQRST the last direction respectfully is review and test. Some might view these two steps the same but those who are ware of the psychological impact on some of t-e-s-t might not agree so readily.

Now that you are familiar with the terms that some of the study systems share, let's try using the ideas on a piece of text.

*PROCEDURAL NOTE: Conduct Activity H. 3

VI. Summary and Conclusion

This session was intended to help us arrive at some understanding of (1) why students at postelementary levels are not yet serious as students, (2) the factors necessary for studying, (3) the possibilities of a flexible reading rate, and (4) the features of some study systems that have been devised.

*PROCEDURAL NOTE: Ask the participants to work together in content-area groups. Distribute one copy of Handout H.7 to each participant. Allow time for discussion of the prepared questions.

Transparencies for Session H

TRAN. H.1

Purposes of Session H:

- Investigate "study" vs. "reading"
- Develop ideas to prompt "study"

TRAN. H.2

Students think study means "read." Why?

Reasons include:

. Conception of reading at early level

. Maturity level of students

. Nature of materials

. Demands placed on elementary teachers

TRAN. H.3

Factors necessary for effective studying:

1. Understanding importance of information
2. Knowing that you need to ask questions
3. Knowing how to begin the attack
4. Getting involved with the material

TRAN. H.4

Understanding the importance of information → having perspective. Perspective comes from the context and purpose given in the assignment to read.

TRAN. H.5

Knowing that you need to ask questions → self-questioning by students.

Self-questioning promotes development of a mind-set for learning.

TRAN. H.6

Knowing how to begin the attack → knowing the way to begin reading.

TRAN. H.7

How you should read something depends on:

- Purpose for reading
- Difficulty level of the material

TRAN. H.8

Information Processing--

SR = Sensory Register
Everything, briefly

STM = Short-Term Memory
Small capacity

LTM = Long-Term Memory
Infinite capacity

TRAN. H.9

Getting actively involved → deeply processing the information

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TRAN. H.10

To get kids actively involved we can ask them to:

1. Respond to questions
2. Compose questions
3. Translate information
4. Chunk information

TRAN. H.11

To study effectively:

1. Have some perspective
2. Question one self
3. Select a <u>way</u> to read first
4. Get <u>actively</u> involved

TRAN. H.12

SPEED READING is <u>NOT</u> a Study Technque

TRAN. H.13

SKIM to get . . .

. major ideas

. general impressions

TRAN. H.14

SCAN only to get . . .

. specific information

ACTIVITY H.1: Directions

Distribute one copy of Handout H.1 to each participant. Tell the participants to follow the directions printed on the handout.

Allow time for the participants to work. The amount of time needed will depend upon the group. When all of the participants have finished working with Handout H.1, try to get the group to discuss what they did as they were working with the two passages. Avoid a discussion of the subject matter of the passages. What they should think about and discuss is how they approached dealing with the passages. The basic question is, did they respond differently to a direction to "read" than they did to a direction to "study"?

(HANDOUT H.1: Introductory Exercise)

An automated system for analyzing microorganisms in the human body heads an array of spinoff developments in the field of health and medicine

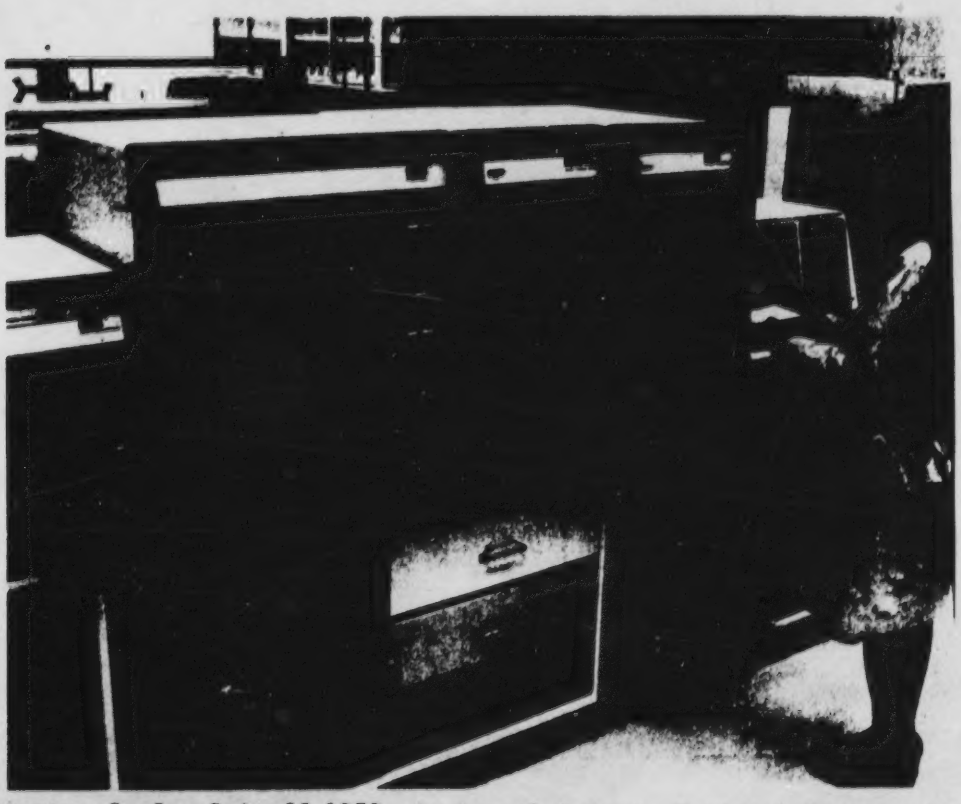
DIRECTIONS: Read this article.

A New Tool for the Hospital Lab

Hospital costs being what they are these days, any innovation that offers reduced hospital stay-time is a very welcome advance in health care service. One such innovation, a space spinoff, is a time-saving system for analyzing a patient's body fluid sample; it automatically detects harmful microorganisms, identifies the type of microbe that is causing the infection, and in some cases suggests the most effective treatment.

Called the AutoMicrobic System (AMS), it is the product of years of research and development by McDonnell Douglas Corporation. The project originated in a NASA-sponsored study aimed at development of a fully-automated microbial detection and identification system for the space program. AMS is now commercially available through Vitek Systems, Inc., Hazelwood, Missouri, a McDonnell Douglas subsidiary.

The multi-module AutoMicrobic System (AMS), whose development stemmed from space-biomedical research, is an automatic, time-saving system for detecting and identifying disease-producing microorganisms in the human body.



From: Haggerty, J. J. Spinoff 1979, An Annual Report, National Aeronautics and Space Administration, February, 1979. Available from U.S. Government Printing Office.

(HANDOUT H.1, p.2)

The traditional manual method of testing for harmful microorganisms, or pathogens, requires these steps: First, specimens of body fluid—urine, for example—are prepared in cultures. These cultures are, in effect, "food" for specific types of microbes. The cultures are incubated for two to three days and studied for cell growth; from such study microbiologists can determine the presence of disease-producing organisms and identify the pathogens.

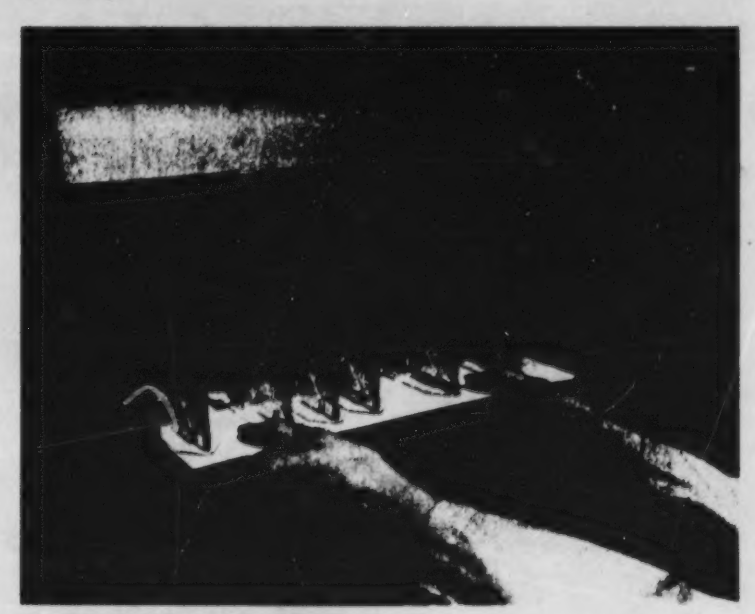
AMS does the same job quicker. Specimens are exposed to microbe nutrients for the nine most common pathogens. During a 4 to 13 hour incubating cycle, an electro-optical scanner studies each specimen once an hour. Changes in cell growth on each culture are monitored by computer. When growth reaches a predetermined level, it indicates the presence of pathogens. The system automatically enumerates the pathogens and specifies the type. On push-button command, the information is displayed in video or reported on a printout.

AMS enables the microbiology laboratory to furnish guidelines for antimicrobial therapy the day after specimen collection; this amounts to a time saving of 50-80 percent over standard laboratory methods. The system also minimizes human error, reduces technician time and increases laboratory output, for AMS can handle up to 240 specimens at one time. Of greatest importance to the patient is shorter time in the hospital due to faster analysis of the infection and earlier treatment.

The basic AMS has recently been improved by development of an additional capability called "susceptibility testing." When the system's count of an identified pathogen shows a level potentially harmful to the patient, a growth sample is subjected to several different microbe-killing agents, such as penicillin or other antibiotics. AMS watches the reactions to determine which drug would be most effective in eliminating the pathogens. The Food and Drug Administration has approved susceptibility testing for one type of bacteria—a common form known as *E. coli*—and expansion of this capability to other types is planned.

About a dozen of the Vitek systems are now in use at Veterans Administration and university hospitals and a number of additional installations are expected this year. Development work aimed at advancing the overall analysis capability of the system is continuing.

A tray containing the body fluid specimens of several patients, each with its own plastic identification card, is inserted into the AutoMicrobic System. The system automatically prepares cultures, incubates them, analyzes them and reports the presence and identity of pathogens, or harmful microorganisms.



In the photo at left, a laboratory technician is transferring a "positive" growth sample–one known to contain pathogens–from the patient's identity card at right to an injector tube for a further processing step. The AutoMicrobic System will subject the sample to several types of antibiotics and report which drug will most effectively eliminate the infection-causing microbes.

NOTE: Now that you have followed the direction to read this article, think for a minute about what you did.

(HANDOUT H.1, p.3)

A system for measuring waterflow in sewers, an aid to controlling water pollution, typifies the aerospace spinoff process

DIRECTIONS: Study this article.

An Environmental Innovation: The Sewer Mouse

In the effort to clean up America's waters, there is a little-known complicating factor: because they leak, sewer systems in many American cities are causing rather than preventing pollution of rivers and lakes. Fixing the leaks is difficult because their locations are unknown. Maintenance crews can't tear up a whole city looking for cracks in the pipes; they must first determine which areas are most likely suspects. An aerospace spinoff is providing help in that regard.

An American Digital Systems field crew prepares to install a sewer waterflow monitoring system. The system, an aerospace technology spinoff, is shown in the foreground.

While one technician mans a safety line, another descends into a sewer to position the waterflow monitoring equipment. The system helps locate pollution-causing sewer leaks.

The problem starts with heavy rains. Rainwater naturally flows into the sewers from streets, but sewage systems are designed to accommodate it. However, they are not designed to handle the additional flow of "groundwater", rain absorbed by the earth which seeps into the sewers through leaks in pipes and sewer walls. After a storm, groundwater seepage can increase the waterflow to deluge proportions, with the result that sewage treatment plants are incapable of processing the swollen flow. When that happens the sluices must be opened, dumping raw sewage into rivers and lakes.

The Environmental Protection Agency has directed that American cities survey their sewer systems to determine the extent of their groundwater seepage problems. The basic method of doing so involves monitoring waterflow depth in the sewers under different conditions—dry, rain and after-rain—as a means of finding out when and where leakage occurs. Flow measurements can be made manually by dipsticks where there is an accessible place to make measurements. But there is another complication: the most readily accessible places, directly below manholes, are not suitable for precise measurement. Sewer design involves building small troughs in the pipes at manhole locations. These troughs help speed waterflow past manhole areas to prevent street-flooding during heavy rains, but

From: Haggerty, J. J. Spinoff 1979, An Annual Report, National Aeronautics and Space Administration, February, 1979. Available from U.S. Government Printing Office.

(HANDOUT H.1, p. 4)

in so doing they create a turbulent waterflow which makes accurate depth measurements impossible. To get the requisite information, municipalities needed a system for acquiring simultaneous and continuous waterflow readings from many different points within a sewer complex.

Peter Petroff provided a solution. Petroff is a Bulgarian-born inventor with about 15 years of aerospace engineering experience; he worked for NASA as an instrumentation designer on several major space programs and served with other organizations as an electronics specialist on missile and commercial aircraft developments. Petroff designed and manufactured a sophisticated sewer flow measurement system which is contributing to more effective sewage processing.

Key to the system is a device called a "mouse," because its shape suggests that of the small rodent and it has a "tail" of long cables, which are connected to a data recorder mounted a considerable distance away under a manhole lid. The mouse, bolted to the floor of a sewer pipe and streamlined to prevent waterflow disruption which would cause inaccurate readings, houses a flow-measuring transducer. The transducer senses differences in pressure, enabling calculation of the amount of water above it. The pressure reading is translated into a water depth reading and relayed through the mousetail cables to the recorder.

Typically, 50 to 100 mouses—not mice, Petroff insists—are installed throughout a city's sewer system. Each provides a water depth reading every 15 minutes, day and night for weeks in dry and wet weather. Every few days, field crews collect the stored data from the recorders and transfer it to a central computer for processing and evaluation. The system does not pinpoint specific leaks, but it does provide clues as to suspect areas for physical investigation; such narrowing of problem zones permits substantially easier and less expensive repair of leaks.

Peter Petroff founded a company to produce the equipment and to provide sewer monitoring service. Called American Digital Systems, Inc., Huntsville, Alabama, it began as a garage industry in 1975, when 40 prototype systems were built. The company has since produced several hundred monitoring systems and its field teams have conducted sewer studies in 30 American cities.

The sewer mouse story is an excellent example of the aerospace spinoff process because it underlines several facets of technology re-use. It shows, for example, the universality of spinoff, how once-developed technology can be re-applied in virtually every avenue of everyday existence, often in ways surprisingly remote from the original application.

Inventor Peter Petroff (right) inspects a key component of the sewer monitoring system, the recorder, which collects and stores waterflow depth information from sensors within the sewer. Computer processing of waterflow data provides clues to leak locations. With Petroff is his son Ralph, marketing manager for American Digital Systems.

In this instance, Petroff applied several different aerospace technologies: aerodynamic streamlining concepts in shaping the mouse; an epoxy material for the transducer housing which stemmed from aerospace research; space-derived miniaturization technology for packaging the electronic components of the data recorder; and data acquisition technology similar to that employed by NASA satellites. In other examples of spinoff, the reverse is often the case: a single type of technology is transferred to many secondary applications, each different from the other.

Petroff's formation of American Digital Systems points up the economic potential of spinoff. As happens frequently, a technology transfer resulted in establishment of an entirely new company, with attendant benefit to the nation's Gross National Product and to job creation. Some spinoffs represent only moderate increments of economic gain, but others involve values running into millions of dollars.

In the sewer application, Petroff himself was the instrument of technology transfer. Many spinoffs are accomplished in this manner; aerospace personnel move to other industries, bringing with them skills and know-how which have non-aerospace potential. Another route by which technology transfer is effected is product diversification on the part of NASA contractors, who use their aerospace experience to develop non-aerospace applications. NASA directly promotes technology transfer in a number of ways which are detailed in Section 3 of this volume.

NASA's technology utilization program, which seeks to encourage secondary application of aerospace technology, has been going on for 17 years, during which thousands of aerospace-originated innovations have found their way into everyday use. Collectively, these spinoffs represent a substantial return on the aerospace investment in terms of economic gain, improved industrial efficiency and productivity, lifestyle innovations, and solutions to problems of public concern.

NOTE: Now that you have followed the direction to study this article, think for a minute about what you did. Did you do anything differently with the second article that you did not do with the first article?

HANDOUT H.2: Questions a Student Needs to Ask About a Reading Assignment
(Note: Questions are not listed in any particular order.)

*Questions are to be asked silently.
*Some questions should have been addressed in the context and purpose of the reading assignment when it was made.

1. What do I already know about this topic?
2. How much do I already know?
3. Why should I read this?
4. How should I read this?
5. How much time should I spend with this?
6. What kind of time should I spend with this?

ACTIVITY H.2: Directions

Distribute one copy of Handout H.3 to each participant. Read through the directions about how to SKIM with the participants.

Distribute one copy of Handout H.4 to each participant. Tell them to follow the directions you just reviewed and to practice skimming for each of the sections of Handout H.4. Allow them time to complete the skimming and then ask someone to state the general idea for each of the sections of the handout.

Read, along with the participants, the directions about how to SCAN on Handout H.3. Distribute one copy of Handout H.5 to each participant. Direct the participants as they attempt to locate information about each of the following cue words (underlined).

- What nutritional ingredients are supplied by dairy products?
- How many respondents thought fresh vegetables were more nutritious than frozen vegetables?
- What determined a "well informed" shopper?
- What percent of the high school graduates who responded to the study were well informed?

Ask if any of the participants took a minute to skim Handout H.4 before they began to scan Handout H.5. If not, ask if they could see advantages to doing so.

HANDOUT H.3: To SKIM and To SCAN

To SKIM:

- Read quickly to get a general idea about the material.
- Look at: the title, the first sentence or two, the lead sentence in a paragraph, the last sentence or two.
- Ignore details, facts, figures.
- Force yourself to go quickly.
- State the major idea to yourself.

Remember: The PURPOSE for SKIMMING is to get a general impression.

To SCAN:

- Watch only for the cue word.
- Make your eyes move rapidly.
- Ignore all other text--you should remember nothing except the specific information for which you were searching.

Remember: The PURPOSE for SCANNING is to locate specific information.

(HANDOUT H.4: Skimming Practice)

Cardiology Mannequin

Education of medical students in cardiology requires access to patients having a variety of different forms of heart disease. But bringing together student, instructor and patient is a difficult and expensive process that does not benefit the patient. An alternate approach is substitution of a lifelike mannequin capable of simulating many conditions of heart disease. The mannequin pictured below, together with a related information display, is an advanced medical training system whose development benefited from NASA visual display technology and consultative input from NASA's Kennedy Space Center.

The mannequin system represents more than 10 years of development effort by Dr. Michael S. Gordon, professor of cardiology at the University of Miami (Florida) School of Medicine. Dr. Gordon was assisted by colleagues at the medical school, by the New York firm of Messmore & Damon which builds the mannequins and by NASA's Biomedical Applications Team, Research Triangle Institute, North Carolina. The latter group searched available NASA literature for technology useful to the development. It was able to identify applicable studies of visual information display techniques performed at Kennedy Space Center; these techniques were subsequently incorporated into the mannequin system.

The electronic mannequin simulates 40 heart disease conditions with a high degree of realism, for example, chest movement, pressure in artificial veins and arteries, and sounds of heartbeat rhythms. On the accompanying display unit, the instructor or student can push buttons to call up such information as patient histories, electrocardiograms, x-rays, blood circulation data and responses to medical and surgical treatments. The mannequin has proved a valuable educational aid at the University of Miami, Duke University Medical School, Yale University Medical School and the American College of Cardiology. The system is being produced commercially by Messmore & Damon.

Temperature Measurement Aid

NASA's Ames Research Center has designed a simple but medically-important device—one which holds temperature probes, called thermistors, to a person's skin without affecting the characteristics of the skin segment being measured. The device improves the accuracy of skin surface temperature measurements, valuable data in health evaluation.

The need for such a device was recognized in the course of life science experiments at Ames. In earlier methods, the sensing head of the temperature probe was affixed to the patient's skin by tape or elastic bands. This created a heat variance which altered skin temperature readings.

The Ames-developed thermistor holder is a plastic ring with tab extensions, shown in the upper photo on the chest, arm and leg of the patient undergoing examination. The ring holds the sensing head of the temperature probe and provides firm, constant pressure between the skin and the probe. The tabs help stabilize the ring and provide attachment points for the fastening tape or bands, which do not directly touch the sensor. With this new tool, it is possible to determine more accurately the physiological effects of strenuous exercise, particularly on the treadmill. The holder is commercially available from Yellow Springs Instrument Company, Inc., Yellow Springs, Ohio, which is producing the device under a NASA patent license.

From: Haggerty, J. J. Spinoff 1979, An Annual Report, National Aeronautics and Space Administration, February, 1979. Available from U.S. Government Printing Office.

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Blood Pressure Checker

An estimated 30 million people in the United States have high blood pressure, or hypertension. But a great many of them are unaware of it because hypertension, in its initial stages, displays no symptoms. Thus, the simply-operated blood pressure checking devices now widely located in public places are useful health aids. The one pictured above, called Medimax 30, is a direct spinoff from NASA technology developed to monitor astronauts in space.

For manned space flights, NASA wanted a compact, highly-reliable, extremely accurate method of checking astronauts' blood pressure without the need for a physician's interpretive skill. NASA's Johnson Space Center and Technology, Inc., a contractor, developed an electronic sound processor that automatically analyzes blood flow sounds to get both systolic (contracting arteries) and diastolic (expanding arteries) blood pressure measurements. NASA granted a patent license for this technology to Advanced Life Sciences, Inc., New York City, manufacturers of Medimax 30.

Medimax 30 is a coin-operated self-checking device that produces blood pressure readings in only 30 seconds—and provides a printed record as well. It is extremely simple; the user puts an arm in the self-adjusting cuff and the rest is completely automatic. Medimax 30 allows the hypertension sufferer to keep ongoing blood pressure records between visits to the doctor's office. It also affords an opportunity for early detection of the disease by the many who are not aware of their problem.

Springback Foam

A decade ago, NASA's Ames Research Center developed a new foam material for protective padding of airplane seats. Now known as Temper Foam, the material has become one of the most widely-used spinoffs. Latest application is a line of Temper Foam cushioning produced by Edmont-Wilson, Coshocton, Ohio for office and medical furniture. The example pictured is the Classic Dental Stool, manufactured by Dentsply International, Inc., York, Pennsylvania, one of four models which use Edmont-Wilson Temper Foam.

Temper Foam is an open-cell, flame-resistant foam with unique qualities. As illustrated in the before and after photos of the dental stool, the material takes the shape of impressed objects temporarily but springs back to its original shape, even after 90 percent compression. When employed as furniture cushioning, it molds to conform to body shape, evenly distributing weight over the entire contact area for comfort and working efficiency. In other applications, the material absorbs up to 90 percent of impact shocks and becomes firmer after subjected to sudden impact. Among the many applications of Temper Foam are wheelchairs and hospital pads, cushioning for off-road vehicles, and a variety of athletic equipment such as body pads, chest protectors and football helmet liners.

(HANDOUT H.5: Scanning Practice)

Nutrition Beliefs: More Fashion Than Fact

Based on their answers to six questions, a majority of food shoppers interviewed were classified as "not well informed" about food and nutrition.

by Joseph R. Pearce

Comparison of findings in the 1975 FDA nutrition knowledge survey with those of the 1974 survey shows that a large number of consumers still hold beliefs about nutrition that are influenced by custom and food fashion rather than fact (see chart 1). Response Analysis Corporation conducted nationwide surveys of American food shoppers in 1973-74 and again in 1975 to provide information on nutrition knowledge and beliefs for the FDA Division of Consumer Studies.

In one of the eight questions designed to measure consumers' beliefs about food and nutrition, shoppers from both surveys were asked whether vitamin C added to a fruit drink gives the same benefit as an equal amount of vitamin C from fresh oranges. The proportion of shoppers who answered "no," indicating that they believe that added vitamin C is not as beneficial as natural vitamin C, rose from 51 percent in 1973-74 to 60 percent in 1975.

The fact is that natural and added vitamin C give the same benefit. Chemists and pharmacists have repeatedly stated that any vitamin has the same properties whether it is "natural" or "synthetic." A vitamin has a specific chemical structure whether synthesized in a laboratory or extracted from plant or animal parts. There are no known nutrition advantages that justify a preference for "natural" vitamins. This fact is especially significant because of the higher prices that "natural" vitamins often command.

There was an increase of 7 percent in the proportion of shoppers who held the erroneous belief that people cannot stay healthy if they never eat meat, poultry, or fish. Forty-one percent of the food shoppers sampled in 1975 felt these foods were essential to health, compared to 34 percent in the earlier survey. In truth, people can stay healthy without eating meat, poultry, or fish if they eat alternative foods such as milk, cheese, or eggs which will supply the essential high quality protein normally obtained from meat. Dairy products not only provide high quality protein, but also essential nutrients such as vitamin B_{12}, calcium, vitamin D, and riboflavin.

In both surveys, a sizable number of people—approximately four out of ten—agreed with the statement, "If you just eat a variety of foods from the supermarket, you will get enough nutrition." Eating a variety of foods is not the same as selecting appropriate foods for a nutritionally balanced diet. Balanced nutrition comes from selecting a variety of foods which will supply the calories, protein, vitamins, and minerals required for body growth, repair, and maintenance of good health. Thus, the shopper needs to know about the nutrient content of foods, which provide the best sources of the various nutrients, and how to combine them into a healthful diet.

Selecting food for nutritional value means choosing from the four basic food groups of meat, vegetables, milk, and bread based on knowledge of the nutrients they contain. Selection as well as variety is a key to preparing nutritious meals.

Almost a fourth of the food shoppers interviewed in both years believed that a person who simply weighs the right amount is receiving proper nutrition. Although proper weight is one of the factors considered in determining whether a person is getting proper nourishment, deficiencies in vitamins and minerals cannot be determined by the weight factor alone.

A revised question in the 1975 survey asked consumers whether canned or frozen vegetables are as nutritious as fresh vegetables. Close to three-quarters of the respondents said fresh vegetables are more nutritious. The fact is that food can lose nutrients in processing, cooking, and storage whether in the home or in the factory. Varying amounts of nutrients will be lost to the extent that foods are improperly processed, overcooked, or stored at improper temperatures and in open containers, whether in the home or in commercial kitchens.

From: FDA Consumer, Vol. 10, No. 5, June, 1976.

Thus, fresh foods are not necessarily more nutritious than frozen ones. Nutrient content depends on how they are handled. The vitamin C value of frozen orange juice is about the same as fresh provided it is stored well below 32 degrees F.

Cooked vegetables lose close to a fourth of their vitamin C after 24 hours in the refrigerator. Since many vegetables contain water-soluble vitamins, loss of these vitamins can occur if the vegetables are cooked in an excess of water which is then discarded.

Another common belief held by American food shoppers concerns between meal snacks. Of the consumers sampled in 1973-74, 42 percent believed that food eaten between meals is never as good for health as the food eaten at regular meals. About the same proportion of the shoppers sampled in 1975 held that same belief.

In reality, nutritional value depends on what types of food are eaten, not the time of day they are eaten. Excessive consumption of between meal snacks with low nutrient-to-calorie ratios such as soft drinks, candy and potato chips may be detrimental to health. However, nutritious snacks such as milk, cheese, or fruit, eaten in moderation, can contribute to a nutritionally balanced diet. Raw vegetable snacks also are nutritious, being low in calories and containing essential vitamins, minerals, and fiber.

Less widely held beliefs include, "You can get enough nourishment if you just eat what you like," and, "Any food sold in a supermarket is good for you." Fewer than one in five shoppers subscribed to these beliefs in both years. A majority of consumers knew that discretion and selection are necessary for proper nutrition. Yet, results of the 1975 survey emphasize that the majority of food shoppers lack the nutrition information that would allow them to make informed choices.

A new measurement in the 1975 survey consisted of the construction of a "beliefs index" (see chart 2). Consumers' beliefs about food and nutrition were measured by use of a composite index constructed from six of the eight questions discussed above. The questions on which the index was based concerned: (1) nourishment and foods people like, (2) food sold in the supermarket, (3) food eaten between meals, (4) body weight as a sign of proper nourishment, (5) nutritional value of canned or frozen vegetables vs. fresh vegetables, and (6) nutritional value of added vs. natural vitamin C.

Shoppers were classified "well informed" if they answered four or more questions correctly and "not well informed" if they answered three or less correctly. On this basis, a majority of the consumers surveyed—51 percent—were classified as "not well informed."

To obtain more detailed data on consumers' food beliefs, the responses of those surveyed were analyzed on the basis of such characteristics as age, education, region of the country, socioeconomic status (an index of income, education, and occupation, and race.

This breakdown showed that younger consumers were more likely to be "well informed" than older ones. Those with college education were better informed than those with high school education or less.

The breakdown by region of the country showed that the consumers living in the West had the highest percentage of "well-informed" shoppers while those in the South had the lowest percentage. When socioeconomic status was examined, those with "high" status were more likely to be "well informed" than those with "low" status. The breakdown for race showed that 51 percent of the nonblack respondents were "well informed" compared to 37 percent of the blacks.

The survey indicated there is a relationship between a consumer's beliefs of food and nutrition and the way that consumer rates his or her own health. Those who were classified as "well informed" on the basis of their answers to the survey questions were more likely to rate their health as excellent than were those who were not well informed. For example, older people not only have declining health that naturally comes with age, but also have misinformed food beliefs which may compound their health problems.

The breakdown of the survey data by age, education, and other characteristics of the respondents should be useful to nutrition educators as well as to FDA in pinpointing population

groups for whom special efforts are needed to improve their nutrition information.

Other findings of the 1975 consumer nutrition knowledge survey will be reported in future issues of FDA CONSUMER.

Joseph Pearce is a consumer science specialist with FDA's Bureau of Foods.

Chart 1: What Food Shoppers Believe About Nutrition

Shoppers' Beliefs	Total Shoppers 1973-74 (1,500) 1975 (1,664)	Agree	Disagree	Depends	No Opinion or Not Sure
Added vitamin C in a fruit drink gives the same benefit as an equal amount obtained from oranges.	(1973-74)	34%	51%	5%	10%
	(1975)	30%	62%	2%	7%
People who do not eat meat, poultry, or fish can stay healthy.	(1973-74)	58%	34%	0%	7%
	(1975)	48%	41%	8%	3%
Eating a variety of foods from the supermarket will provide enough nourishment.	(1973-74)	40%	39%	19%	2%
	(1975)	39%	43%	15%	3%
Canned or frozen vegetables are just as nutritious as fresh vegetables.	(1973-74)	No comparable question in 1974.			
	(1975)	18%	71%	7%	4%

Chart 2: Food Shoppers' Beliefs Index—1975 Survey

	Not Well Informed	Well Informed
All Food Shoppers (1,664)	51%	49%
Age:		
18 - 34 (650)[1]	43%	57%
35 - 49 (561)	47%	53%
50 - + (433)	59%	41%
Education:		
Less than High School (212)	72%	28%
High School (948)	54%	46%
College (497)	34%	66%
Region of Country:		
North East (419)	47%	53%
North Central (463)	48%	52%
South (519)	59%	41%
West (263)	45%	55%
Socioeconomic Status:		
Low (545)	68%	32%
Middle (600)	50%	50%
High (519)	31%	69%
Race:		
White/other (1,485)	49%	51%
Black (177)	63%	37%

[1] Figures in brackets are number of respondents

ACTIVITY H.3: Directions

Divide the participants into work groups of 3-4. Distribute one copy of Handout H.6 to each participant. Direct the participants to work together in their group to apply the common points of the study system to their article.

While the groups are working, write on the chalkboard the 4 basic ways that kids can be encouraged to interact with material:

1. Respond to questions
2. Compose questions
3. Translate information
4. Chunk information

Use these points as a basis for a discussion of the following question:

Have the authors of the various study systems devised foolproof systems to get students to study effectively? How many of the 4 basic ways that kids can be encouraged to interact with material have been tapped by the study systems?

COMMUNITY CRIME PREVENTION

Consensus on a public issue is never easy to achieve in a democracy. It has been the American experience, however, that when a genuine consensus emerges, effective action follows. Such a consensus exists today in the United States on the seriousness of the problem of crime and the dimensions of the threat it poses to the quality of life and the integrity of institutions. The keynote of this report and, indeed, of the entire Commission effort is that the greatest potential for reducing the incidence of crime in America lies in activities directed at preventing the occurrence of crime.

This report describes a crime and delinquency prevention role for the community. The community, as described in the chapters that follow, means society at large—individual citizens, families, neighborhoods, schools, churches, recreational associations, business, labor, and government. The report deals with programs and activities directed toward removing the desire or need for an individual to commit crime as well as with programs directed toward reducing opportunities to commit crime.

It should be stated at the outset that the Commission and the Community Crime Prevention Task Force did not limit themselves to programs that could be funded under the Omnibus Crime Control and Safe Streets Act. The extent to which funding by the Law Enforcement Assistance Administration could or could not be expended for crime prevention, for example, is discussed in Appendix B.

The Commission's mandate was to develop a blueprint for reducing crime in America, and in doing so, the Commission felt it could not ignore such fields as education, employment, recreation, and the delivery of government services. Precedent for our efforts can be found in the work of the President's Commission on Crime in the District of Columbia and the 1967 President's Commission on Law Enforcement and Administration of Justice.

When the Commission and the Community Crime Prevention Task Force began their work, they were faced with a seemingly contradictory problem. On one hand there were numerous studies showing that crime and delinquency occur more frequently where there is also low educational achievement, high unemployment, inadequate recreational facilities, inadequate delivery of social services, and, most importantly, where the citizens are alienated from the government and from each other.

On the other hand, the Commission found little agreement on the causes and prevention of crime. In describing prevention, one author writes:

> The field of prevention is by far the least developed area of criminology: current popular views are naive, vague, most erroneous, and for the most part devoid of any awareness of research findings. . .[1]

The Commission did not attempt to evolve a detailed theory of crime and delinquency prevention. Instead it focused on those areas outside the criminal justice system that appeared to have the greatest potential for reducing crime and improving the quality of life.

TARGET CRIMES

From the beginning, the Commission concentrated its resources on developing goals, standards, and recommendations directed toward reducing the violent crimes of murder and nonnegligent manslaughter, aggravated assault, rape, and robbery, as well as the property crime of burglary.

These crimes were chosen because of their effect on public fear of crime. It is this fear that so radically diminishes the quality of life and strikes at the most fundamental right of American citizens—the right to feel secure in one's home and on the streets. They also were chosen because the economic loss resulting from the five target crimes is considerable. Direct losses as well as medical expenses and loss of work productivity due to violent crimes and burglary are estimated to run into the hundreds of millions of dollars.

ASSUMPTIONS

In developing this report, the Commission made three major assumptions:

1. Citizen apathy and indifference contribute to the spread of crime;
2. Private and public agencies outside the criminal justice system influence rises and declines in crime rates; and
3. Community crime prevention efforts include demonstrable benefits for existing institutions and agencies organized toward the achievement of other primary goals.

A brief examination and explanation of these assumptions will enable the reader to understand more clearly the structure and content of the chapters to follow.

CITIZEN ACTION

The consensus of the Commission and the Task Force is that if this country is to reduce crime,

[1] Peter Lejins, *The Field of Prevention*, pp. 1-2.

From: Community Crime Prevention, National Advisory Commission on Criminal Justice Standards and Goals, 1973. Available from U.S. Government Printing Office.

there must be a willingness on the part of every citizen to give of himself, his time, his energy, and his imagination.

Judging by the size of the crime problem, the Nation's record is not impressive. This country has preferred in large part to ignore the frustration and rage that produce crime and instead has developed a ponderous bureaucracy to deal with symptoms, rather than the problem itself.

Enlisting the American conscience and active support on behalf of community crime prevention is at once an ironic and necessary procedure. It is ironic because of the hue and cry about the current volume of crime. It is widely assumed the government and its agencies alone must respond to this demand and marshal all available resources to choke off crime at its roots..

A recently published book, *State of the Nation*, in attempting to find out what this country felt could be done to reduce crime, developed a series of proposed solutions and asked respondents to list their preferences. None of the solutions, with the possible exception of one calling for stricter parental discipline, spoke to community involvement or citizen action. Yet at the same time the respondents selected with greatest frequency a proposed solution that called for "cleaning up social and economic conditions in our slums and ghettos that tend to breed addicts and criminals." [2]

This viewpoint neglects the certainty that unless a worried citizenry can translate its indignation into active participation in the search for and implementation of a solution, governments and their criminal justice systems inevitably must fall even further behind in their crime control and rehabilitation efforts. Awakening the conscience of America is a necessity: if the multiplicity of factors that produce crime and delinquency are not recognized and remedied, more crime will occur, more of it will go undetected, and the inadequacies of the system thus will become even stronger incentive for further illegal activity.

How does one enlist the public conscience as the initial step in a concerted community effort at crime prevention? How are social sensitivity and awareness to be substituted for indifference? Where does a campaign begin to replace widespread apathy with enlightened and responsible citizen action? The answers to these and similar questions become apparent if we can successfully define community crime prevention as an urgent national priority.

The Commission and the Community Crime Prevention Task Force believe that there must be an energetic national campaign whose aim is to sensitize communities to the dimensions of the crime problem and the level of effort necessary to provide a solution. This report contains suggestions for action at the local level and offers guidelines for individual citizens, communities, and organizations that may wish to cooperate in voluntary and governmental activity directed against crime and its causes.

The Commission believes that effective crime prevention is possible only through broad-based community awareness and involvement. In Chapter 1, Citizen Action, and Appendix C, Citizen Action Programs, the Commission documents numerous instances in which communities already have recognized this reality and acted on it. The report cites examples of crime and delinquency prevention programs and projects that have reduced crime, supplemented available criminal justice resources, found jobs for juveniles and ex-offenders, and encouraged people to return to school and complete their education. It is hoped that these success stories will serve as a catalyst and incentive to new efforts in all our States, cities, and communities.

THE ROLE OF PUBLIC AND PRIVATE AGENCIES

The second assumption of this report is that public and private agencies and institutions outside the criminal justice system influence rises and declines in crime rates.

A major theme of the report is the more efficient and responsive delivery of general services—education, manpower development, recreation, and other social services including drug abuse treatment and prevention programs. Better delivery of these services should reduce the feelings of alienation of many citizens. It also should increase the confidence of citizens in public and private institutions, thus fostering cooperation with these institutions—including those of the criminal justice system.

The Advisory Commission on Intergovernmental Relations in its 1972 report, "The New Grass Roots in Government," stated:

> During the 1960's the inability of many municipalities to respond adequately to demands for more and better public services resulting from the urbanization of our Nation and the growing role of the Federal Government in dealing with problems that were traditionally local responsibilities, were accompanied by a sense of citizen powerlessness and frustration.
>
> Many citizens, especially the poor and minorities, felt they were unable to gain access to the "system" and to influence decisions affecting their lives, either through the

[2] William Watts and Lloyd A. Free (eds.), *State of the Nation*, a report by Potomac Associates (Universe Books: 1973), pp. 118-120.

bureaucracy or the ballot box. In the wake of declining services and progressing bureaucratic remoteness, they became more and more apathetic and alienated.[3]

Louis Harris, in a poll published in 1972 and entitled, "Feeling of Alienation Up Sharply in the Last Year," [4] found that feelings of alienation ran throughout the country and were broadest concerning economic complaints.

The connection between alienation and violence was documented by the National Commission on the Causes and Prevention of Violence, and, more recently, by a team of researchers at the University of Michigan Institute for Social Research, who concluded that an individual is more likely to resort to violence when he is alienated and perceives himself a member of a group that has less access than other groups to valued resources.[5]

The Commission, in its chapter on Citizen Involvement and Responsiveness, set out recommendations that would involve citizens in the processes of government and distribution of resources and improve bureaucratic responses to the needs of the community and the individual citizen. The importance of neighborhood governments, delivery of services at the neighborhood or community level, neighborhood city halls, governmental complaint reception services, and related alternatives are discussed.

As noted earlier, there also is a strong indication that delinquency and crime occur more frequently where poverty, illiteracy, unemployment, drug abuse, and inadequate recreational and mental health resources exist. To the extent that effective and responsive delivery of public and private services promotes individual economic and social well-being, the Commission believes that it will contribute to a reduction in crime.

The relationship between crime and the absence or ineffective delivery of these services dictated in part the areas selected for discussion in this report. For example, in the area of education, the 1966 President's Commission on Crime in the District of Columbia found that 56 percent of the adults in Washington who committed crimes of violence had only an 8th grade education, and 86 percent had not completed high school. It also found that 40 percent of the adults who committed violent crimes had no history of regular employment at the time of arrest, and 68 percent of adults arrested for committing burglaries had no history of regular employment. This was compared with a 4.2 percent unemployment rate for all of the District of Columbia.[6]

In a study published in 1972, entitled Delinquency in a Birth Cohort, the authors found consistently higher delinquency rates associated with low educational achievement [7] and a study published in the Journal of Political Economy in 1972 claimed a direct correlation between unemployment and crime in certain age groups.[8]

In developing this report, the Commission realized that it could not formulate precise laws for predicting which individuals would commit crimes. At the same time, it recognized that crime prevention initially requires an attack on those conditions in society that contribute to or support crime. The Citizen Action chapter of this report, in a section called "Attacking Crime's Infrastructure," articulates the proposition on which the Commission acted. Having called for citizen action on such social priorities as employment, education, and recreation, the chapter states:

> This is not to say that if everyone were better educated or more fully employed that crime would be eliminated or even sharply reduced. What is meant is that unemployment, substandard education, and so on, form a complex, and admittedly little understood, amalgam of social conditions that cements, or at least predisposes, many individuals to criminal activity.
>
> Thus a job, for example, is just one wedge by which to break this amalgam. Increased recreational opportunities represent another. Though one wedge may not have much effect on an individual's lifestyle, two or three might.

The Community Crime Prevention Report contains recommendations for increasing the educational level of youth, for increasing job opportunities and skills, and for increasing recreational opportunities. The role of the family and, in particular, the effect of the family on educational achievement are discussed in detail.

CRIME PREVENTION AS A GOAL OUTSIDE THE CRIMINAL JUSTICE SYSTEM

The final assumption is that crime prevention efforts include demonstrable benefits for institutions

[3] Advisory Commission on Intergovernmental Relations, *The New Grass Roots Government* (January 1972), p. 1.

[4] Louis Harris, "Feelings of Alienation Up Sharply in Past Year" (Chicago Tribune – New York News Syndicate, Inc.: 1972).

[5] Monica Blumenthal and others, *Justifying Violence: Attitudes of American Men* (Institute for Social Research, University of Michigan, 1972), p. 10.

[6] Report of the President's Commission on Crime in the District of Columbia (1966).

[7] Marvin E. Wolfgang, Robert M. Figlio, and Thorsten Sellin, *Delinquency in a Birth Cohort* (The University of Chicago: 1972).

[8] Llad Phillips, Harold L. Votey, Jr., and Darold Maxwell, "Crime Youth and Labor Market," *Journal of Political Economy* (May/June 1972).

and agencies with other primary goals.

The report shows that an employer who sponsors a drug education or treatment program for his employees both advances his own economic interests and contributes to a decline in the incidence and dangers of drug abuse in his community. School-sponsored job counseling and referral services can reduce the number of dropouts, enabling many young people to avoid the idleness and boredom that may contribute to juvenile delinquency and classroom disruption. Churches and community clubs willing to make their facilities and personnel available on a broader basis can attract new members to their programs while providing expanded recreational and social opportunities to many heretofore excluded.

SERVICE DELIVERY SYSTEMS

As noted earlier in this chapter, delivery of services is a vital element in crime prevention efforts, and the Commission feels that successful delivery can be achieved only through the development of a system specifically designed for that purpose.

The Commission and its Task Force, in reviewing the service delivery concept, were particularly impressed with the operations of the Youth Services Bureaus. These agencies, designed to function as central coordinators of all community services for young people, now exist in nearly 200 locations across the country. Their success might well serve as a model for a service delivery component of a comprehensive social services delivery system.

It is the Commission's belief that the standards contained in this chapter appropriately could be more broadly applied to coordinate services across the whole range of social, rehabilitative, and medical care offered by existing agencies. In this way, much wasteful duplication of services might be avoided, communication would be improved, and individual clients would be assisted in a coordinated fashion to arrive at their best functioning level.

The Commission and Task Force are confident that if the standards and recommendations in this chapter and other sections of this report are carefully implemented, dramatic progress is possible both in the effective delivery of social services and in the prevention of crime.

CONCLUSION

There must be a clear recognition on the part of community organizations, agencies and facilities that the degree of imagination, efficiency and enthusiasm they bring to their own work has a direct impact on crime prevention. Institutions are not asked to redefine themselves and their functions to accommodate the purpose of this Commission. Rather, suggestions are provided for ways to harmonize efforts toward community crime prevention and thereby promote the peaceful, ordered, and creative society to which most Americans aspire.

HANDOUT H.7: Study Tips: Three problems for discussion:

1. Few students really understand what it means to "study." Before they can effectively study they need to understand what factors are necessary for effective study. When, where and how should students be taught about these factors?

2. When might skimming and scanning be used effectively in your content area? Suggest some ways to get the students in your classes aware of these processes.

3. Would a study system that incorporates the common features of the study systems we discussed be helpful to the students in your content area? What common features should it include? Suggest some ways to get the students in your classes to adopt such a study system.

Session J: Making Meaning Meaningful and Lasting: Additional Study Tips

If students can be encouraged to become actively involved with the text as they study, they should remember what they have read longer. The purposes of this session will be:

1. To acquaint the participants with methods to get students involved with text.

2. To provide a forum for the participants to plan how they will help students develop the ability to use one or more of the methods.

Outline for Session J

I. Introduction

*Presentation

II. What should students learn from text?

*Presentation

III. Ideas for getting students involved with text

*Presentation

*Activity J.1 - Individual, Guided Practice: Note-taking

*Presentation

*Activity J.2 - Individual, Guided Practice: Cognitive Mapping

IV. Conclusion

*Presentation

*Activity J.3 - Small group, Discussion/Application: Study Involvement

*Activity J.4 - Large group, Discussion/Application: Study Involvement

Materials Needed for Session J

Not all materials have been developed for this session.

Session J: Making Meaning Meaningful and Lasting: Some Additional Study Tips

I. Introduction (Review concepts from Session H)

*Presentation

In Session H, "Making Every Minute Count: Some Study Tips", the meaning of the term study was looked at closely. In addition the ideas behind most study systems (e.g., PQRST, SQ4R) were discussed. If any study system is to be successful, the student must become actively involved with the material to be learned. In this session we'll look at some ways of getting students involved with their assigned text.

II. What should students learn from text?

*Presentation: This should include discussion of the following factors: The student should be able to: (1) see the relationship between ideas presented in the text, (2) select out and remember the important facts, (3) understand the author's organization.

III. Ideas for getting students involved with text

*Presentation[1]

- Note-taking: using short phrases and using outlines

*Activity J.1: Simulation with common materials using both methods

*Presentation[1]

- Cognitive Mapping (include discussion of classifying)

*Activity J.2: Simulation with common materials

IV. Conclusion

*Presentation: This should summarize the ideas presented throughout the session.

*Activity J.3: Small group (content area) discussion about the participants experiences with using the involvement ideas presented in III above. The participants should see if they agree on one system (e.g., note-taking in short phrases or cognitive mapping)

[1]All presentations should include an explanation of that method plus a detailed description of what the teacher would have to provide to encourage the use of that system.

that seems to be the most appropriate for their subject matter. If they can, they should discuss ways that they can help the students become aware of that system and ways to encourage students to begin to regularly use the system.

*Activity J.4: Large group (all participants) discussion to share with each other the conclusions reached in the small group (content area) discussions.

Session K: Asking Questions

Questioning forms the basis for most student-teacher interaction, both written and oral. The questions that are asked relate to the text that is assigned to be read and the objectives of that unit and/or class. The purposes of this session will be:

1. To encourage participants to investigate the types of questions they ask.

2. To explore how the questions that are asked help the student to reach the expected goals and objectives of the class and of the school.

Outline for Session K

I. Questions in the classroom

*Presentation

*Activity K.1 - Small group, Guided Practice/Application: Classroom Questions

II. Questions on a test

*Presentation

*Activity K.2 - Small group, Guided Practice: Test Questions

III. Student responses

*Presentation

*Activity K.3 - Small group, Discussion/Application: Student help

IV. Conclusion

*Activity K.4 - Individual, Application: Classroom Questions

*Activity K.5 - Small group, Discussion/Application: Test Questions

*Activity k.6 - Large group, Discussion/Application: Question Patterns

Materials Needed for Session K

Not all materials have been developed for this session. The participants, however, should bring with them one copy of a test they recently administered in a class. This will be used to complete Activity K.5.

Session K: Asking Questions

I. Questions in the classroom

*Presentation. Question asking and question answering form the basis for almost all of the teacher-pupil interaction that takes place in the classroom. This presentation should investigate classroom questions as discussed by Sanders (1966) in regard to Bloom's Taxonomy.

*Activity K.1. Simulation activity. (This activity has 2 parts.) Part I: Ask the participants to work in content area groups. Give each participant a handout on which are the questions that have been asked by a hypothetical teacher in that content area during one class period. Have the participants classify the questions according to Bloom's Taxonomy. Ask them on the basis of their classifications to outline what they believe the objectives of that teacher would be for that class.

Part II: Ask the participants to devise objectives for one class they might teach and then to outline the types of questions that should be asked to achieve these objectives. Is the pattern similar to what they discovered in the simulation exercise? If the patterns are different, in what way are they different?

II. Questions on a test

*Presentation. In this section, review the types of questions that teachers can devise with special attention to how the purpose and objectives for a test (and ultimately a class) must relate to the type of question used on a test. Outline the advantages and disadvantages of each type of question and discuss the parameters that ought to be established for each type (e.g., number of items on the test). Be sure to include several types of questions, including essay, short answer, multiple choice, true/false, as well as any other types that are frequently used in your school.

*Activity K.2. Simulation activity. Offer the teachers an opportunity to devise different types of questions for the objectives of a learning unit and reading passage that you give them. Ask for volunteers to share the questions they devise. As a group analyze the questions as to (1) level on Bloom's Taxonomy and (2) appropriateness for objectives that were defined.

III. Student Responses

*Presentation. This should outline the psychology of test taking and oral question answering. Be sure also to offer suggestions on how to help students overcome some of the difficulties they experience in taking tests.

*Activity K.3. Small group (content area) discussions. Ask the participants to discuss (1) the test-taking behavior that students need to develop for their content area and (2) ways in which students could be helped to develop these abilities.

IV. Conclusion

*Presentation. Review the major points outlined in each of the preceding sections.

*Activity K.4. This activity would be assigned in the workshop setting but could not be completed until the teachers returned to their classes. The participants should keep a record of the questions they ask during one class period and then analyze them to discover at how many levels of Bloom's Taxonomy they are asking questions. Ask the participants also to evaluate their questions to determine if the questions asked are helping to achieve the stated goals for the class. Invite the participants to bring this with them to a future workshop so they can compare patterns, etc., with other teachers in their content area.

*Activity K.5. Encourage the participants to work in content area groups. Ask the participants to analyze a test they have recently given in their class. Have them look at the question types and level of questions (according to Bloom's Taxonomy) in relation to (1) their objectives for the test and (2) their objectives for the class. Are the test items doing the job for them? Are there changes they could suggest on the basis of what they have discussed in this session?

*Activity K.6. Large group discussion. Ask for content area representatives to summarize the types of questions that appear to be best for their subject matter. With the other participants, try to determine if the patterns are similar or different across content areas. Are these questioning patterns helping the students toward meeting the goals and objectives established by the school district? If not, how can adjustments be made to assure these goals and objectives will be met?

Session L: Putting It All Together

In each of the 10 preceding sessions one theme concerning reading in the content areas was designated for discussion. Some of these sessions dove-tailed nicely while some others may have appeared to be less integrated. For a content-area teacher to adopt most of these practices it is essential that the themes presented fit together to form a cohesive whole. The purpose of this session is to provide an opportunity for the teachers to explore how the pieces do fit together -- for them as individuals, for their content areas, and for the entire learning environment of the student.

*PROCEDURAL NOTE: TRAN. L.1 summarizes the purpose.

Outline for Session L

I. Teachers vs. text

*Presentation

II. Teacher advantages and content-area reading

*Individual/Small group, Discussion/Application: Reading Process and Content Learning

*Large group, Discussion/Application: Reading Process Insights Shared

III. Conclusion

Materials Needed for Session L

- 1 copy each of Transparencies L.1 and L.2
- Overhead projector and screen
- 1 copy for each participant of Handout L.1
- Multiple copies for each participant of Handout L.2
- Participants should bring all handouts plus any notes they have taken during previous sessions

Session L: Putting It All Together

I. Teachers vs. text

We all know that a teacher can make the difference as to whether a student learns or doesn't learn. We know that a few students can learn a great deal by just reading a text, but we also know that most students learn best if a teacher is there to guide them through that text. Most of this "knowing" is intuitive for those who have worked in education. Only recently have researchers begun to take a look at what it is that teachers do in a classroom that texts alone cannot.

A research study recently completed by Schallert and Kleiman (1979)[1] identified four advantages that teachers have over text. Said another way: they identified four ways that teachers can offer assistance to students that text cannot. Said a third way: they identified four factors that make teachers more effective than text.

*PROCEDURAL NOTE: See TRAN. L.2

These four ways are:

1. Teachers can tailor a message.

2. Teachers can activate prior knowledge.

3. Teachers can focus attention.

4. Teachers can monitor comprehension.

Let's examine each of these four advantages more closely.

1. Teachers can tailor a message.

This means simply that teachers can adapt their presentations to the students in their classes. They can interpret the message by modifying the vocabulary and the sentence syntax. Teachers can interact with the students by asking questions, by answering questions, by observing facial expressions and by responding to the personality variations among the class members.

The text can represent the thoughts of the author. The text can be interpreted by the student but when selected it must fit the needs of the student because it cannot adjust to meet that student. Students must adapt to text, text cannot adapt to students.

[1]Schallert, D. L., & Kleiman, G. M. Some Reasons Why Teachers Are Easier to Understand Than Textbooks. Reading Ed. Dept., No. 9, Center for the Study of Reading, Urbana, Ill., 1979.

2. Teachers can activate prior knowledge.

Teachers know what the students have been studying. Teachers know also the terminology students have used in the past when discussing a specific topic. Teachers can remind students about information they learned in the past that might facilitate learning the new information. They know whether a reference to a specific bit of information will help the students and whether that reference should be subtle or forceful.

Text can attempt to allude to an assumed prior knowledge. The author of that text, however, can never be certain that the student does, in fact, have that prior knowledge.

3. Teachers can focus attention.

Teachers can ask direct questions, reward correct responses, encourage or discourage discussion, all for the purpose of channeling the attention of the students to a particular point. Prior to interaction with the students, teachers select the aspects of the text to be focused on.

Text can be written so that most attention can be focused toward specific points. But the student must react independently to all the right cues in order to follow that direction. If the student deviates, the text cannot redirect efforts to return to the intended points.

4. Teachers can monitor comprehension.

This advantage interacts closely with the first advantage, tailoring a message. By asking questions while the student is learning, teachers can check on what and how much students are learning as they read. This can prompt the teacher to tailor the message accordingly.

Text can be accompanied by questions designed to monitor comprehension but the text cannot adjust based on the responses of the students. Only a teacher can do that.

The advantages that teachers have over text is what makes a difference in the learning of the students.

II. Teacher advantages and content-area reading.

In these ten sessions we have worked together discussing several themes related to content-area reading. Each of these themes, if worth merit for student learning, should fit somewhere into the advantages of teachers just presented. Where do they fit?

This session will be different from the preceding ones. Instead of being guided through various learning exercises, you will now do the guiding.

*ACTIVITY 1: INDIVIDUAL or SMALL GROUP ACTIVITY: See Activity L.1: Directions (If teachers work in small groups, it would be best if they were divided by content-areas.)

*SMALL GROUP DISCUSSION: Allow the participants plenty of time to work to complete Handout L.2. If they have been working individually, ask them now to get into small (3-4) content-area working groups. Ask each group to appoint a discussion leader and then consider two points:

1. Are there ideas for incorporating content-area reading that seem to be more appropriate than others for your subject matter?

   Do these ideas correspond to one advantage more than to the others? If yes, would it be appropriate in your content-area to achieve more of a balance among the objectives? How could you do this?

2. At what grade levels and in which classes should the major ideas selected in 1 above be incorporated?

*LARGE GROUP DISCUSSION: When (and/or if) the small group discussions begin to finish up, invite the groups to return to a large group situation. Ask the small group discussion leaders to briefly summarize the activities of their groups. Ask all the participants to be on the lookout for:

1. Patterns across groups

2. Content-area reading ideas no one has presented

3. Teacher advantages that might need bolstering

III. Conclusion

The participants themselves will be the ones who make this session an extremely stimulating one. As director of the session attempt to summarize the discussions of the day. Suggest to the teachers they have been invited to become acquainted with and use a variety of techniques that will foster the development of their students' content-area reading abilities, only the teachers themselves can implement the ideas. Make it clear that you are willing to help in any way possible and suggest two other means by which they may get additional support, ideas and inspiration:

1. By discussing techniques with fellow teachers

2. By observing (and being observed in) daily classroom teaching situations.

Happy content-area reading staff development!

Transparencies for Session L

TRAN. L.1

Purpose of Session L:

- Provide opportunity to explore how themes of preceding sessions fit together

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TRAN. L.2

Teachers have 4 advantages over text.

. A teacher can . . .

- tailor a message
- activate prior knowledge
- focus attention
- monitor comprehension

ACTIVITY L.1: Directions

Distribute one copy of Handout L.1 to each participant. Explain that all of the sessions are listed there by title. This will help them to organize their notes.

Distribute one copy of Handout L.2 to each participant) have ready plenty of extra copies). Tell them this is a worksheet that should help them to organize all that they have learned in these staff development sessions. Show them how to complete the worksheet using the following example:

First column: Idea for developing content-area reading ability

1. Make sure each assignment given includes a context

Second column: Session in which idea originated: B

Last 4 columns: Check all the advantages that this idea should benefit check activate prior knowledge and focus attention

Allow them plenty of time to work and encourage them to use their handouts as well as any notes they have taken during previous sessions.

HANDOUT L.1: Themes from content-area reading staff development sessions

Session A: Building a comprehensive K-12 reading program

" B: Making assignments

" C: Factors contributing to the complexity of text

" D: Ideas from words: developing content-area vocabulary

" E: Extracting ideas from the printed page

" F: Making sense of ideas extracted from print

" G: Utilizing textual aids

" H: Making every minute count: some study tips

" J: Making meaning meaningful and lasting: additional study tips

" K: Asking questions

" L: Putting it all together

HANDOUT L.2: Coordinating ideas for content-area reading and advantages[1] a teacher has over text.

Idea for developing content-area reading ability	Session in which idea originated	Advantage[1] that idea corresponds to:				
		Tailor a message	Activate prior knowledge	Focus attention	Monitor comprehension	

[1]Schallert, D. L., & Kleiman, G. M. Some Reasons Why Teachers Are Easier to Understand Than Textbooks. Reading Ed. Dept., No. 9, Center for the Study of Reading, Urbana, Ill., 1979.

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Appendix A

Summary Comments from the Conference on the Problems of Developmental Reading Instruction at Postelementary Levels

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Note. This conference was held on March 7, 1980 at the Wisconsin Research and Development Center for Individualized Schooling for the purpose of bringing together not only people who have an interest in reading instruction at postelementary levels, but who also represent a range of perspectives, including: three reading teachers, two K-12 reading coordinators, an assistant superintendent in charge of curriculum, a representative from a state education agency, a professor of reading education, two individuals involved in reading research, and the vice president of a company which specializes in publishing educational materials. For 1 day the participants gathered to: (a) discuss the problems of developmental reading instruction at postelementary levels and (b) offer suggestions from their experiences for the design of the staff development sessions that are outlined in this paper.

Conference on the Problems of Developmental Reading

Instruction at Postelementary Levels

March 7, 1980

Summary Comments

Those in attendance at the Conference seemed to agree that the problems of developmental reading instruction at the elementary level can be defined more easily than such problems at postelementary levels. The reason for this is the increased complexity of the instructional organization at the postelementary level. The reading problem results from the interaction of many factors that reflect this complexity of organization including:

• an understanding of the nature of reading. For some at postelementary levels, reading is thought of as an ability that the student possesses upon entry to that school, but not as a continually developing ability that must be perfected throughout the schooling of that individual. That reading is one aspect of the learning process is not understood.

• the aura or mystique of reading instruction. Through the years, either consciously or unconsciously, those who are specialists in reading instruction have been quite successful in developing the idea that they alone have special abilities that enable them to help with the reading problems of students. Teachers in general have become convinced they do not possess such special abilities.

• the reading materials available for content area classes at post-elementary levels. Materials that, from the perspective of the teacher, best address their subject matter, may not be suited to the reading abilities of the students. Conversely, materials appropriate to the students' reading abilities may not adequately address the subject matter.

• the process/content dichotomy taught during teacher training. This dichotomy, never addressed directly by educators or content experts, puts the teacher and the students squarely in the middle. During preservice training teachers learn that there is wide variation in the ability of students. They learn that some students will function less well in a classroom than will other students. Also during preservice training teachers learn a great deal of information about their content area. Apparently what preservice teachers are not taught is a process by which they can select information that should be learned by students of different abilities. What results in many content-area classes at postelementary levels is that <u>all</u> students are expected to learn equal amounts of material. (Usually the only students excepted are those who have been clearly identified as having a learning disability.)

• the importance of ongoing leadership in the school. Some one person must be available each day to provide technical and moral support for those teachers who attempt to help their students develop a greater expertise with reading. These support personnel can help to identify

a student as a special learner, identify the materials that would benefit that student the most, suggest teaching techniques that might work with an entire class, or simply offer words of encouragement for the classroom teacher.

• the resources available to monitor activities in the classroom. In many school systems adequate numbers of personnel well trained in classroom observation skills are not available. In addition, easily administered techniques that allow the documentation of good classroom practices, as well as a means of measuring improved classroom practices, are not at the disposal of the personnel that are available. In addition, because of declining enrollments, a reduction in the number of supervisory personnel is almost assured.

• the students' perceptions of themselves as learners. Students are confused about how they are to go about the business of learning. Possibly because of their orientation from elementary levels, students appear to consider reading a separate subject quite removed from learning social studies or science. They simply do not think of using the skills they developed in reading class to determine, for instance, the major ideas of a reading assignment for history class.

• the financial reality of the world. Little money is (and will continue to be) available for strengthening the reading programs at postelementary levels for two reasons: (a) increasing costs due to inflation and (b) citizen opposition to increased taxes.

• the almost overwhelming complexity of the reading problem. Because of this complexity no one faction within the school system has been able

to devise an overall plan of long-range solutions. The attempts at problem resolution have been honest, but they have not been far reaching enough to make an impact.

Any solution to the multifaceted problems of developmental reading at postelementary levels, then, must include attention to:

1. Furthering the idea that developing one's ability to read effectively and efficiently is a life-long endeavor.

2. Dispelling the belief that only reading teachers can help students to read more efficiently and more effectively.

3. Pointing out that precisely correct materials for any situation will never be available and that teachers must deal with existing materials despite all their drawbacks.

4. Assisting teachers as they develop guidelines that will help them to make decisions about the relative importance of concepts in their content areas.

5. Suggesting that one person be identified to coordinate all efforts and to provide the leadership that is necessary to put any program into effect.

6. Evaluating the impact of a solution. This will be difficult, but evaluation is essential.

7. Offering suggestions that content area teachers can use to encourage students to apply the reading/learning skills used at one time in one situation to other times in other situations.

8. Recognizing that limited sums of money will be available for any program.

9. Developing an awareness among professionals at all levels (e.g., central office personnel, school building administrators, and classroom teachers) concerning (a) the complexity of the reading problem and (b) suggestions of possible solutions to be tried by both administrators and teachers.

10. Pointing out that effective and long lasting change requires a lengthy commitment with little immediate reward.

Specific recommendations for the inservice sessions that are currently being developed at the R & D Center were offered by those in attendance at the Conference. These recommendations included:

1. Attempt to provide suggestions that teachers can use to develop guidelines for selecting the information in their content areas that is essential for students to learn.

2. Offer practical suggestions for classroom management to assure that the ideas presented in the inservice will be put into practice.

3. Include dynamic activities that will get teachers involved with process oriented ideas; e.g., simulation activities that put teachers into the position of a student, communication activities, activities that require teachers to examine their own ideas, activities that will act as a catalyst to get the ideas into the classroom.

4. Require active teacher involvement at each session so that the participants can recognize their need to be involved with the topic and will be encouraged to immediately begin to use the ideas presented.

5. Use adult materials first so that th participants will identify with what students experience with materials at their level.

6. Include multimedia materials that will have an impact on the participants.

7. Remind those who will conduct the inservices that to encourage teacher cooperation in carrying out the ideas presented it is essential to:

a. Provide personal attention to professionals as they develop their skills. That this is important in developing the expertise of students is apparent in the HOSTS (Help One Student To Succeed) program.

b. Provide daily encouragement for individuals participating in the inservice.

c. Help participants come to accept the idea that it is safe for them to take risks in their efforts to become better in their jobs.

Appendix B

Learning/Reading Skills Questionnaire

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This questionnaire was sent to approximately 800 content-area teachers, grades 7 through 12 in almost 100 schools in the Midwest. The purpose of the questionnaire was to solicit content-area teachers' responses to reading/learning skills commonly included in the reading curriculum at the elementary level that (a) are essential for learning content at postelementary levels and (b) are skills for which teachers of grades 7 through 12 expect to need to offer help. A complete report of the results of that survey were reported in an earlier technical report (Morrison, 1980) from the Wisconsin Research and Development Center for Individualized Schooling. The results of the survey were used to outline the content of the suggested staff development sessions included in this paper.

Survey: Learning/Reading Skills for _____
(Please indicate your content area)

A. Please complete the following:

1. Total number of years of teaching experience _____

2. Number of years of experience in teaching in this content area _____

3. Total number of graduate credits completed in education _____

4. Number of graduate credits completed in the teaching of reading _____

5. Approximate number of students in attendance at your school _____

B. Please list the classes, by title, that you are currently teaching:

	Class Title	No. of Students	Grade Level of Students
1.			
2.			
3.			
4.			
5.			
6.			
7.			

C. (Optional) We are sending this survey to teachers in eight states. Up to this point we have no way to identify who you are, what school you are affiliated with, etc. We do not think at this point we will need that information. But, we find ourselves in a predicament. If we should have a question about your response, we would like to be able to contact you. If you will give us your name and address to use if need be, we promise to share it with no one.

Name _____

Address _____

_____

over plea

WORD ATTACK AND VOCABULARY SKILLS	A. Relevancy of the Skill? Needed	Not Needed	Depends... Please Explain	B. Your expectations of the students' ability? Help Needed	No Help Needed
1. The student sounds out words.					
2. The student uses clues from the sentence to determine the meaning of an unfamiliar word.					
3. The student uses clues from the sentence to determine the correct pronunciation of a word.					
4. The student identifies at sight frequently used words.					
5. The student uses roots, prefixes, suffixes to determine the meaning of a word.					
6. The student seeks appropriate meaning for technical words and phrases.					

Are there skills you feel we should have included? If so, what are they?

Other comments (use other side if necessary)...

COMPREHENSION SKILLS	A. Relevancy of the Skill? Needed	Not Needed	Depends... Please Explain	B. Your expectations of the students' ability? Help Needed	No Help Needed
1. The student determines the main idea of a paragraph.					
2. The student determines the main idea of a selection (i.e., several paragraphs).					
3. The student uses stated (e.g., first, next) and implied sequence clues.					
4. The student analyses relationships (e.g., cause and effect) to reach conclusions.					
5. The student interprets specialized notations (e.g., formulas, equations).					
6. The student interprets graphic displays (e.g., maps, graphs, tables, diagrams, patterns).					
7. The student considers author's purpose.					
8. The student distinguishes fact from opinion.					
9. The student recognizes persuasive techniques.					
10. The student questions the relevance of information to a topic.					
11. The student identifies details that support a position.					
12. The student attempts to generalize from information read.					
13. The student attempts to apply information gained from reading.					
14. The student makes use of transitional words, phrases and clauses as bridges to join ideas.					

TGT

Are there other Comprehension Skills you feel we should have included? If so, what are they?

Other comments...

STUDY SKILLS	A. Relevancy of the Skill? Needed	Not Needed	Depends... Please Explain	B. Your expectations of the students' ability? Help Needed	No Help Needed
1. The student sets a purpose for reading.					
2. The student formulates questions relevant to his/her purpose for reading.					
3. The student adjusts reading speed to the type and difficulty of the materials.					
4. The student adjusts reading speed to his/her purpose for reading.					
5. The student attends to the organization of material.					
6. The student skims material for overview.					
7. The student scans material for details.					
8. The student takes notes in meaningful way: a. short phrases. b. informal/formal outlines. c. cognitive maps. d. marking directly on text.					
9. The student uses special features of books (e.g., table of contents, index) as appropriate.					
10. The student uses basic references (e.g., dictionary) as needed.					
11. The student utilizes sources (e.g., card catalog) to locate materials.					
12. The student employs appropriate test taking strategies.					

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Are there Study Skills you feel we should have included? If so, what are they?

Other comments...